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# THE JOURNAL

*of the*

## Missouri State Medical Association

The Official Organ of the State Association and Component Societies  
Issued Monthly Under Direction of the Publication Committee

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### THE CHRONIC PROSTATE: POINTS OF INTEREST TO THE AVERAGE PRACTITIONER

NEIL S. MOORE, M.D.

AND

STEPHEN M. TAPPER, M.D.

ST. LOUIS

When one speaks of inflammatory conditions of the prostate, per se, difficulties arise due to the interrelationship of the prostate with the posterior urethra, the seminal vesicles and the ejaculatory ducts. The correlation of these structures is so intimate that there is not only a prostatitis but also an associated posterior urethritis and seminal vesiculitis which may spread by direct extension to produce an epididymitis.

The prostate is a compound tubulo-alveolar gland composed of three main lobes; namely, two lateral and one posterior or median lobe. The ducts numbering fifteen to thirty transmit the secretion of the gland into the posterior urethra adjacent to the verumontanum. On palpating the prostate rectally one feels the posterior surface, the two lateral lobes on either side with a median groove representing the location of the median lobe.

#### ETIOLOGY

The majority of cases of prostatitis are due to the gonococcus by direct extension from the anterior urethra; but prostatitis may be due to the invasion of other organisms such as the staphylococcus, streptococcus and colon bacillus. Of interest is the case of a practicing physician who had a "cold" and later developed an epididymitis which was a direct extension from an acute prostatitis due to the colon bacillus which was found on staining the expression. His history for gonorrhea was negative.

That the gonococcus may prepare the soil for invasion of other nonvenereal organisms long after the venereal infection is relieved is indisputable. Such a prostate, devitalized by venereal infection, remains a source of possible recurrence following any of the many forms of dissipation such as excess

sive alcoholism and sexual abuse, overwork physically or mentally and acute febrile diseases. Trauma produced by instrumentation may act as a nidus for infection, especially when encountered in retention of urine following operation.

#### SYMPTOMS

Acute prostatitis may begin with tenesmus, burning and frequency of urination. There is a diminution and even a disappearance at times of the urethral discharge. There is a feeling of fullness in the perineum and a sensation of incomplete emptying of the bladder contents. The second glass urine, which up to this time is clear, becomes turbid. The patient feels hot and looks flushed due to a rise in temperature. There is a leukocytosis with an increase in polymorphonuclear neutrophils. The prostate may enlarge to the point of causing complete urinary retention necessitating catheterization. A retention catheter may be required frequently offering only temporary relief which may become an irritant and the symptoms aggravated. Large doses of sedatives may be necessary for relief. Generally the prostate on rectal palpation is symmetrically enlarged, tender and there is increased local temperature. The process may go on to suppuration, particularly if central or cortical; the subjective symptoms grow worse, chills, urinary difficulties and pain increase; the gland becomes larger, more tender and especially asymmetrical. Leukocytosis increases and fluctuation may be definitely perceptible on palpation. Prostatic abscess may be analogous to a peritonsillar abscess. The increase in pain and difficulty on swallowing is known as well as the illness of the patient prior to rupture of the abscess, followed by instantaneous and pronounced relief. Following rupture of a prostatic abscess into the urethra with an increased bloody discharge there is relief of frequency and burning and the heavy feeling complained of in the perineum diminishes. The general symptoms decrease with a diminution in temperature and leukocytosis. An abscess may rupture into the rectum and often surgical drainage may be necessary, especially if the infection is of nongonorrheal origin.

The symptoms of chronic prostatitis are irregular, varied and complex. Since an isolated infec-

tion of the prostate is rare and there is almost invariably an associated involvement of the urethra, seminal vesicles, ejaculatory ducts, vas and epididymis, consideration of the entire genital tract is necessary. During every physical examination especially when ruling out foci of infection a rectal palpation of the prostate should be included. Too much stress cannot be placed on rectal examinations of every male patient and this should be done as frequently as, if not more often than, vaginal examinations in the female. The requirements are a finger cot and a lubricating jelly. Conditions such as prostatitis, seminal vesiculitis, hypertrophied prostate and rectal carcinoma can be thus diagnosed. One physician by making routine rectal examinations found a hardness of the prostate in a young man 34 years of age which later was diagnosed as sarcoma of the prostate. The patient's chief complaint at that time was pain in the left side of the back which he attributed to grippe. This pain was due to a hydronephrosis and the enlarged prostate which obstructed the lower left ureter.

Prostatitis may be regarded as chronic shortly after the acute symptoms decrease and there is no abscess formation, or after rupture of an abscess. The discharge may be more or less present during the day but is more pronounced in the morning with stickiness of the meatus producing the so-called morning drop. There may be no discomfort or there may be slight burning on urination. The first glass urine may be cloudy with shreds or may be clear with shreds. The second glass may be cloudy or clear. The longer the chronicity the clearer is the urine. There may be no acute condition of the prostate especially in nongonorrheal prostatitis. Here the chief complaint may be only a morning drop or only a stickiness of the meatus with a discharge expressed from the urethra on defecation. In a young man 23 years of age this was the only complaint; that is, urethral discharge on bowel movement with a tendency to constipation. Both urines were clear. Rectal palpation revealed a massive, boggy prostate filled with pus cells. The causative organisms on repeated stains were never found. Another common symptom is backache more pronounced in the lumbar region which readily clears up on massage. Lumbago is a frequent term for this type of backache. There may also be associated a generalized sluggishness and malaise. The change in make-up of the individual after a productive prostatic massage is remarkable. Irritability and nervousness may be the only symptoms. One patient in whom no definite cause could account for the nervousness was referred by a neurologist. No organic lesion was present and all foci of infection were eradicated except the prostate. Rectal examination revealed few pus clumps in the first stripping. Biweekly massage alleviates the nervousness but if the patient discontinues treatment for any length of time the symptoms return.

Another frequent trend of symptoms is sexual disturbance such as loss of desire, faulty erection and painful and bloody ejaculations. These sexual disturbances may become progressively worse leading to mental depression, melancholia and sexual neurasthenia. Individuals with these complaints allow the quacks to flourish because of their advertisements about lost manhood, impotency and sterility. Tenosynovitis and iridocyclitis may be caused by a chronically infected prostate. These conditions clear up under prostatic massage and irrigations. In every case of arthritis when foci of infection are being eliminated one should always include a prostatic examination. The history of a gonorrheal infection which is complicated by a posterior urethritis, prostatitis or seminal vesiculitis will help make the diagnosis. In other types of infectious arthritis where a prostatic examination reveals pus and nonspecific organisms good results can be obtained by massage of the prostate regularly. There is a tendency to a flare-up of the arthritic condition with increased pain after massage which is avoided by continuous treatment.

#### DIAGNOSIS

The diagnosis of prostatitis can be made by the history and urinary findings together with the two glass urine tests and by rectal palpation with microscopic inspection of the expression. In postgonorrheal prostatitis the entire glandular structure apparently is infected. This is evidenced by the secretion expressed from such a prostate being thoroughly intermingled with pus cells. In prostatitis due to focal infection the process often does not involve all the acini and on microscopic examination many fields of normal prostatic secretion are seen. In fact, the infection is so deeply seated at times that pus is obtained only at a second or third prostatic stripping, a finding almost never encountered in prostatitis of true gonococcal origin. If one is not equipped for instantaneous microscopic examination of the expressed secretion a great deal of reliable evidence may be obtained from a careful rectal palpation of the gland and closely connected seminal vesicles collecting the expression in a small container for macroscopic observation. Although the border-line case requires microscopic examinations, the more pronounced type may be strongly suspected if not accurately diagnosed by a careful clinical analysis of manifest symptoms and the general yellowish appearance of the thick expressed secretion. Improvement of the condition under treatment is of great diagnostic value.

#### TREATMENT

In acute prostatitis bed rest is essential, if possible, together with large quantities of water. Ice bags to the perineal region may alleviate the tenesmus. Opium in the form of suppositories may be placed in the rectum for the frequency and tenesmus. Catheterization may have to be resorted to for the acute retention. Antipyretics and



at times codeine must be given for relief, either by mouth or by hypodermic. At this time if the disease is venereal it is best to stop all local injections and irrigations and to treat symptomatically. Rectal palpations should be done daily to determine an early abscess formation. Generally an abscess formed by the gonococcus ruptures spontaneously into the urethra, whereas abscesses produced by other organisms such as the staphylococcus or colon bacillus group may necessitate perineal incision and drainage. To insert a rigid instrument into the bladder such as a sound and massage the prostate with intention to rupture the abscess into the urethra is poor policy and may lead to rupture of the abscess into the surrounding tissue or into the rectum. Incision and drainage are necessary if the abscess ruptures through the capsule into the adjacent structures but if the abscess should rupture into the rectum the lower bowel should be kept clean with enemas. In such a case after rupture healing generally takes place readily and a sinus rarely forms.

We feel and so teach medical students that a urethral discharge following at any time after gonorrhea is in 95 per cent of cases due to involvement of the prostate and vesicles. This discharge or morning drop, often referred to by the patient as a strain, is due to drainage from the prostate and vesicles. After diagnosis of chronic prostatitis has been made treatment is by irrigation and prostatic massage. Irrigations for washing the bladder and posterior urethra are best given before massaging the gland and can be administered with or without a catheter. The irrigations soothe the bladder neck and trigone which are more or less involved in chronic prostatitis and after massage any expression remaining in the urethra is washed out thus decreasing if not preventing the incidence toward epididymitis. For irrigations we generally and preferably use lunosol (Hille) 1:1000 solution. Other medicaments used are potassium permanganate from 1:5000 to 1:10,000 solution, 1 per cent silvol, and many others. The solutions should be warm and the Valentine irrigator should be elevated about three or four feet above the table on which the patient is lying to prevent excessive pressure. In patients with quite sensitive urethra, also for passage of all rigid instruments, we inject nupercaine 1:500 solution into the urethra as a local anesthetic.

Massage of the prostate should be gentle in the beginning and the pressure exerted by the finger should depend upon the reaction of the patient. A convenient method is to have the patient stand two feet away from a table and bend over at right angles with the lower extremities, which are straight, and feet apart about 18 to 20 inches. The patient rests his weight with his left hand against the table and with his right hand holds a container to collect the expression. The gloved index finger of either hand is well lubricated and inserted slowly and gently into the rectum. The size and

consistency of the prostate is first determined together with the condition of seminal vesicles which are located upward and outward on the lateral lobes. Pressure is exerted from above downward from the upper lateral portion to the medial lower part on either side in the form of a V; this method strips the lateral lobes; pressure is then exerted from above downward in midline and the median lobe is emptied of its contents. This should be done several times and in a great majority of cases an expression can be obtained. Afterward the patient is allowed to void the retained solution. Prostatic massage should be done biweekly until there are no pus cells after several strippings and no shreds in the urine. Sounds Nos. 22 and 26 French should be used to prevent stricture formation and to drain the glands in the posterior urethra.

An adjuvant to posterior irrigation and massage from which we have been deriving good results is dry heat. We use a box about two feet square with an oval space cut out on top which allows the perineal portion to receive the benefit of the heat. The heat is produced with five 75 watt electric light bulbs which are inside the box. The intensity of the heat can be regulated by the number of bulbs allowed to burn. Generally the patient sits on this box for ten minutes either before or after irrigation and massage. Short wave diathermy is used although its use in this series of cases is too limited to determine the beneficial or harmful results if any.

Azo dyes, especially pyridium and serenium, are given by mouth in the coccus infections of the acute type. We give hexymethenamine and sodium acid phosphate in acute cases produced by bacillus infections. Mandelic acid has also been used in bacillus infections but our statistical data are insufficient to warrant conclusions; however, the beneficial results we have so far obtained justify further use.

Our results with vaccines as a specific have been disappointing but we have derived some good results in the acute and early abscesses; this is due perhaps to the reaction produced as by a foreign protein. Another foreign protein of value is whole milk boiled, cooled and injected intragluteally beginning with 6 to 7½ cc. and increasing the dosage every other day depending on the amount of reaction and results obtained.

Prostates can be injected directly with a needle by puncturing in the midline in the perineum, having a finger in the rectum as a guide. Mercurochrome from 5 to 10 per cent is used and about 5 cc. injected directly into the prostate. The patient suffers increased pain with a rise in temperature. The same result can be obtained with milk injections into the buttocks.

In seminal vesiculitis, where drainage is flowing down the duct and acting as a nidus of infection for the prostate, injection of the vas produces good results. Four per cent mercurochrome is injected on either side.

The patients are allowed a full general diet with condiment restriction and large quantities of water.

#### CONCLUSIONS

1. Vesiculoprostatitis is a frequent complication of gonorrheal urethritis.
2. Prostatitis can be produced by other organisms such as staphylococcus, streptococcus and the colon bacillus group.
3. Regular prostatic examinations during specific urethritis and especially at the end of treatment are essential.
4. Every physical examination should include a prostatic examination.
5. A frequent focus of infection that is often overlooked is the prostate.
6. In every case of urethral discharge, especially in the so-called "strain," a prostatic massage should be done and repeated if necessary.
7. Prostatic massage may have to be performed several times in order to rule out infection.
8. Massage should be gentle and irrigation prior to massage will prevent if not decrease greatly an epididymitis.
9. In cases of prostatitis undergoing treatment the patients have a decreased tendency to hypertrophy.

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#### DISCUSSION

DR. NEIL S. MOORE, St. Louis: To amplify briefly some of the important points, which Dr. Tapper has so ably presented in the body of the paper, seems timely. The mass of material from which this presentation emerged has been observed in outpatient dispensary and hospital service and in our office work. Naturally our private cases, in their cooperative way, have furnished the most conclusive information. To have covered the subject in a manner satisfactory to ourselves would necessitate a great deal more time for presentation than we are allowed on this program. We have, therefore, attempted to enumerate only those points of interest which the busy practitioner may readily evaluate. The characteristic anatomical structure of the prostate and vesicles makes them particularly susceptible to pathologic microorganisms which may gain entrance by numerous routes, most commonly by way of the urethra. That these organs become secondarily infected from remote foci such as tonsils, teeth, boils and abscesses, is undisputed. When once infected the symptomatic silence which characterizes the disease is the one reason they are so frequently unsuspected and equally overlooked in a physical examination. They then become hosts of concealed infectious material ready to discharge toxins at any time the body resistance is lowered.

Upon numerous occasions we have observed patients, who while on a trip to New York or Europe when discretion was ignored develop a feeling of malaise, slight elevation of temperature, other symptoms of toxemia and usually urinary frequency with urethral discharge, show a complete satisfactory mental change when the trouble was located in the prostate gland. Such cases are recurrences of long standing but dormant infection which the patient had supposed was entirely cured. These attacks are frequently excited by long train or automobile rides and change of habit. Of particular interest is the occasional case, in which urethral catheterization is necessary following many lower abdom-

inal operations, that continue urinary retention long past the usual average time for relief and in whom the prostate is palpably normal but eventually a small abscess is located and symptoms are relieved only when rupture of the abscess takes place.

Equally interesting, but certainly more pitiful, are the rather numerous cases of ocular involvement, or those with joint disease who may virtually become blind or nearly hopeless cripples before seeking medical aid when, after exclusion of all other possible foci of infection, the prostate alone is found at fault. Perseverance on the part of the doctor and the patient to pursue the proper treatment over a sufficient period of time will be rewarded with satisfactory relief.

Of the various forms of therapy, not excluding applications of heat, cold, rectal suppositories, short wave diathermy, foreign proteins and many others, digital massage of the prostate and vesicles rationally administered is without doubt our most effective method of treatment. As an act of kindness and a service to humanity I feel it my duty at this time to unequivocally refute the statement frequently made by a notorious radio advertiser that massage of the prostate gland produces cancer. It has been my good fortune to observe many hundreds of cases of infected prostates and as yet I have never seen a single case develop cancer as the result of prostatic massage. On the contrary, careful massage of the prostate and vesicles is an effective means of ridding these organs of irritating secretions which by virtue of the irritation theoretically may produce cancer. Then, too, massage of these organs even in the absence of infection, distasteful as the procedure may seem to one not regularly engaged, frequently serves as a stimulus to sexual vigor and a general feeling of exhilaration.

## DIAGNOSIS AND TREATMENT OF DISEASES OF THE ESOPHAGUS

JOHN S. KNIGHT, M.D.

KANSAS CITY, MO.

In the last four years three rather unusual esophageal cases stand out in my memory and I wish to make a discussion of them the basis for this paper. Each case will present an entirely different problem. Yet there is a close resemblance in that each case was or could be mishandled at some stage. For the sake of completeness and in conformity with the title, I shall take the liberty of quickly showing two slides prepared by the incomparable Jacksons<sup>1</sup> which deserve deep study. They represent the various possibilities for trouble, viz.: (1) Anomalies, (2) esophagitis, acute, (3) esophagitis, chronic, (4) erosion, (5) ulceration, (6) trauma, (7) stricture, congenital, (8) stricture, spasmodic, including cramp of the diaphragmatic pinchcock, (9) stricture, inflammatory, (10) stricture, cicatricial, (11) dilatation, local, (12) dilatation, diffuse, (13) diverticulum, (14) compression stenosis, (15) mediastinal tumor, (16) mediastinal abscess, (17) mediastinal glandular mass, (18) aneurysm, (19) malignant neoplasm, (20) benign neoplasm, (21) tuberculosis, (22) lues, (23) actinomycosis, (24) varix, (25) angioneurotic

<sup>1</sup>Read at the 80th Annual Meeting of the Missouri State Medical Association, Cape Girardeau, May 10 12, 1937.



edema, (26) hysteria, (27) functional antiperistalsis, (28) paralysis, (29) diphtheria, (30) antiperistalsis, (31) aerophagia, (32) foreign body in (a) pharynx, (b) larynx, (c) trachea, (d) esophagus.

Jackson and Jackson<sup>1</sup> also recommend the following steps in the order of procedure for the complete examination of the esophagus: (1) Anamnesis, (2) general physical examination, (3) general examination of nose and throat, (4) mirror examination of larynx and pyriform sinuses, (5) system tests, (6) fluoroscopy, (7) fluoroscopy with opaque mixture and capsule, (8) roentgenogram with opaque mixture, (9) esophagoscopy, (10) biopsy in certain cases.

Our first case was one of "so-called cardiospasm," which the author demonstrated several years ago.<sup>2</sup> Briefly, the history and course follow.

#### CASE REPORT

Case 1. Woman, aged 48, in 1933, gave a history of twenty years of difficulty in swallowing. She had progressively become worse and for the last ten years had confined her diet to liquids entirely. In the last month she had had great difficulty in swallowing liquids, lost nineteen pounds in weight and lived in constant fear of choking. Fluoroscopic studies disclosed a tremendous reservoir dilatation (3 qts.) of the lower esophagus and an almost complete obstruction to the passage of barium into the stomach (fig. 1). Two weeks of swallowing efforts by the patient failed to get a string through the narrowing. In three esophagoscopy examinations we were unable to find the opening. In the course of these studies a biopsy was taken from the lower portion of the sacculization and was found to be keratinized esophageal mucosa. It was suspected

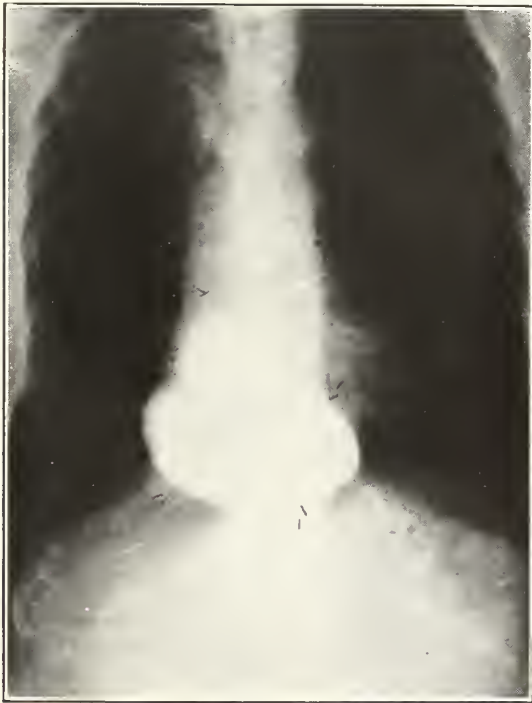


Fig. 1. Case 1. Preventriculosis. Note the large sac or dilatation filled with barium and the almost complete occlusion of the lower end of the esophagus. This condition has been called cardiospasm.

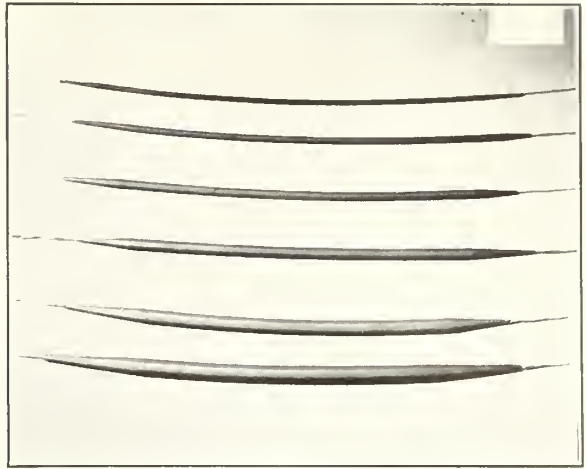


Fig. 2. Tucker Retrograde Bougies. They are made of the best grade rubber vulcanized on a braided silk string. Thirteen sizes are made, from 10 to 34 French. Pulling one of these bougies up from a gastrostomy into the strictured esophagus will result in a much safer dilatation. Gradual increase of sizes is recommended.

that we might be dealing with a herniated gastric lesion but this did not prove to be the case. Gastrostomy was then performed and after two weeks' delay, endoscopic localization of the cardiac opening was done through the gastrostomy wound and a soft-nosed Jackson esophageal bougie and attached string was passed upward into the dilatation and the string was recovered



Fig. 3. Case 1. Preventriculosis, four years later. Note the diminution in the width of the esophageal dilatation and the apparent ease with which barium flows into the stomach. There has been no treatment in the interim.

from above. A course of gradual dilatations with Tucker's<sup>3</sup> retrograde bougies (fig. 2) and dilator has resulted in a clinical cure. For the last four years this patient has been able to eat anything that she wished and has gained forty-six pounds in weight. Fluoroscopic studies now disclose about one fourth of the original dilatation and a prompt entering of the barium into the stomach (fig. 3). At the present time, four years later, she is in remarkably good health and most happy.

In my mind, the etiology of this case was a cicatricial narrowing from a healed peptic ulcer of the lower esophagus. Previous to her swallowing difficulty she had had indigestion.

Case 2. Woman, aged 25, had atresia of the esophagus from sulphuric acid burns. For several months after the ingestion of the acid her family physician told her that "she would outgrow the swallowing trouble." It was not until she had been unable to swallow water for three days that she consulted another physician and he realized the seriousness of her situation. At this time her weight had dropped to 87 pounds and she was dying of thirst when she arrived from her home town one hundred miles distant. A gastrostomy was performed by Dr. E. Lee Miller after we found a complete closure of the upper esophagus. After waiting three weeks, an open-mouth scope was passed through the wound into the stomach, but we were unable to find the esophageal opening. By passing a cystoscope and filling the stomach with water we were able to find the opening and pass a ureteral roentgen ray catheter into the esophagus up to the atresia. An apron-like fold of the anterior wall of the stomach had collapsed over the opening. Later, I read that Iglauer<sup>4</sup> had used the cystoscope in a similar manner. With an esophagoscope exposing the cicatrix from



Fig. 4. Case 2. Atresia of the esophagus. This picture was taken several days after the closed forceps had been passed through the cicatrix. Note the extremely narrow pathway for the opaque fluid. For three weeks prior the patient had been unable to swallow water.



Fig. 5. Case 3. Reconstructed view of patient with a carcinoma of the upper esophagus manifesting itself by protrusion forward of the party wall resulting in difficult breathing.

above and with the help of the fluoroscopist we made an opening through the atresia with a closed foreign body forcep (fig. 4). A swallowed thread was recovered and we were able to dilate by the retrograde method of Tucker.<sup>3</sup> After she returned home she was advised to pass a Hurst mercury-filled bougie regularly. For the last three years she has had no difficulty in swallowing.

Case 3. Woman, aged 65, chief trouble was wheezing and difficulty in breathing of six months' duration. Roentgenogram of the chest and fluoroscopy of the esophagus failed to detect any abnormalities. A bronchoscopy was requested and we found a smooth protrusion into the lumen of the upper trachea just below the voice box. No other chest pathology was found. On investigating the upper esophagus we encountered a large cauliflower malignant mass (fig. 5) which was involving the tracheo-esophageal party wall and yet had caused no swallowing difficulties.

Here we have a case of esophageal disease manifesting itself by its effect on the neighboring structures. We were able to outline to the relatives a limited expectancy of life.

#### CONCLUSIONS

Let us keep in mind that all cases that have ingested acids or caustic alkalies should not be neglected nor ignored. A strictured lumen may be dilated under direct vision in the early stages obviating a gastrostomy and the resultant disability and hospital expense.

There are many unsuspected cases of peptic ulcer of the esophagus. One of the etiological factors of so-called cardiospasm is a peptic ulcer. Blind bouginage is a dangerous procedure and should never be considered unless a diagnostic examination under direct vision has been performed. Blind bouginage in the first two cases would have ended in failure and possibly in death.



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## CARE OF THE NON-HOSPITAL INDIGENT

JEROME E. COOK, M.D.

ST. LOUIS

When Dr. Alford proposed to me in a brief note the subject for this evening's discussion, he added, perhaps as a bit of encouragement, "This problem has not been solved." And I am sure that none of you has come here expecting to hear the solution this evening. But out of discussion may come purpose, plan, action, trial (and error), and possibly an approach to solution.

The problem is fundamentally an economic one; its very statement postulates that. If society could abolish indigence the problem vanishes. Medical care is not the only need of the indigent. There are other necessities besides medical care. I feel rather proud of belonging to a group that will come together regularly for serious discussion of the problem of indigence, at least that part of the problem about which we are best informed and can most directly exert an influence. We do not hear of any association of grocers meeting to discuss the question of how the indigent can be fed, nor of realtors meeting to discuss the housing of the indigent, nor the purveyors of clothing studying the problem of raiment for the indigent.

What is the definition of indigence from a medical point of view? It has been repeatedly emphasized that medical needs are different from other needs in that for the most part they cannot be foreseen either as to the time of their occurrence nor as to their duration and cost. Unlike other needs, medical care usually curtails or abolishes whatever earning power has previously existed. Taking these facts into consideration, it may be said fairly that most employed wage earners, except those in the executive class, are medically speaking indigent or potentially indigent.

The problem is not a new one. Its growing urgency was indicated some decade ago by the formation of the Committee on the Cost of Medical Care. The report of this Committee brought the subject into the focus of public and particularly medical attention, and in the discussions which followed, there was inevitably wide reference to the various European schemes through which an approach to solution of the problem had been attempted.

You are familiar with the objections that have been voiced against European sickness-insurance plans. But let us suppose for the moment that these objections did not exist. Let us grant that the working of these plans had been as smooth and their benefits in preventive and curative medicine as great as their proponents had desired; nevertheless it would be difficult or impossible, not to say undesirable, to transplant those plans into the field of American medicine.

In this country we have an outlook upon life and freedom and social strata somewhat different from the European. This is reflected in many of our institutions, particularly in our public system of education and to a lesser extent perhaps in the democratic structure of organized medical practice. This country is, I believe, unique in that medical practice in the hospital is not sharply separated from practice outside the hospital; that our hospital staffs are composed of the same men who carry on the practice of medicine and the specialties in the consulting room and at the bedside. Our hospitals are hospitals for all the people; our medical profession is not stratified; we have fortunately avoided in great part the inefficient "nursing home" and "Privat-klinik" on the one hand and the immense herding of the charitable or "voluntary" hospitals on the other. I believe this democratic organization of our system of medical practice has made us leaders in medical science and in medical service to the community. I believe it should be jealously guarded.

But to guard and preserve a living and growing human institution does not mean that it should be encased in rigid, air-tight walls. Even without the survey to which I have referred, we of the medical profession were becoming increasingly aware of the need of some new formulae to bring to the public at large the developments of modern medical science. We were becoming increasingly aware that the "family physician" could not alone and unassisted fill this growing demand; that we must as a profession devise means for bringing modern medicine to the service of the entire community. But we have differed a little as to how this may best be done.

It would be pleasant and without doubt profitable if we could in leisurely academic fashion carry on the debate and the assembling of statistics on these medico-economic problems for some years to come. But there are signs of storms brewing, lowering clouds, a whistling of the winds, and every evidence that we should as men of wisdom and experience trim our sails, chart a path and steer a course. The economic depression of the past half dozen years, the vast unemployment, now somewhat ameliorated but still grossly disturbing, the changing attitude of the employed and unemployed alike to the question of social security have brought about a storm of protest and a demand that adequate and efficient medical services be made available to the mass of people. Attempts have been



made by smaller groups both within and without the organized profession to meet this demand but with only partial success. In St. Louis we are attempting to follow along the lines of the so-called Washington plan of medical service program. As you know, only one of the three component parts of this plan is running smoothly, i. e., Group (prepayment) Hospitalization. The budgeting Service Bureau division for extending credit to low income group patients has not received sufficient support from the members of the Medical Society to be self sustaining. I shall not here enter into the reasons for this lack of support by the profession; suffice it to say that the Service Bureau has up to the present time played an insignificant rôle in our medico-economic problem and has not been accepted with enthusiasm by either the profession or the public. The third component of the plan, the Admitting Bureau, is still in the future. It would seem that its effective administration will take a far greater degree of cooperative spirit and effort among various medical and social service groups than has yet been evidenced. It must therefore be granted that the organized effort for medical security which the Society has instituted has not yet gone any great distance toward the solution of the problem.

Meanwhile certain trends are developing outside these organized efforts which to my mind seem ominous if ignored or if not brought into some larger plan acceptable to the general profession in which it can exert a proper guidance. I refer to the various prepayment medical schemes whether frankly organized as insurance plans or under the euphemistic name of "cooperative medicine." Do not mistake me. I have no objection to the insurance principle of "spreading" a risk whether it be a fire, an accident or a sickness risk. But I do object to the exploitation of the medical profession by these insured groups and to the great and lasting harm which can come to the profession in sitting by indifferently while these groups gain all influence and power over the course and destiny of medical practice and medical science.

And that is just what has happened in every European country. The European systems of so-called "socialized medicine" that have lamed and hobbled the science and practice of medicine did not spring up overnight. They developed gradually as a result of the need for medical services—medical security if you will—and of the gross indifference of the medical profession as a whole as to how this need was to be met.

Various insurance schemes developed: Voluntary societies, "Friendly Societies," "Krankenkassen," "Cooperatives," etc., embodying some of the appeal of the secret society or fraternity or trade union psychology. These various groups bargained for their medical services with the individual members of the profession. And they did it on a price-quantity basis and not on a quality-science basis. Physicians in England of the nonspecialist group

competed for employment in the medical panel of these insurance societies and accepted fees as low as 50 cents per capita per year. The same conditions prevailed on the continent. The "voluntary" insurance societies gained in number and influence; the organized profession did nothing about this exploitation of medical practitioners and the degradation of medical standards. Finally in each country the government, as a matter of political expediency, welded its various health insurance societies into a National Insurance Plan by means of a government subsidy and fixed by law a per capita or fee basis for medical services.

Then and only then did the organized profession take an interest in the problem. Fees and free choice of physician were the chief points of debate. The government could point out that the fee basis was far more liberal than that under which many individual practitioners were serving the health insurance societies, and that the profession had for years ignored the principle of free choice of physician in the insurance society's contracts and bargainings with individual physicians. I shall not follow the picture further nor attempt to recount the bickerings and the endless adjustments which this belated interest of the medical profession in the popular demand for medical service for all the people necessitated. What I am attempting is to draw a parallel and a lesson.

This country is fast reaching the point where an insistent demand by an increasing number of the populace for medical care will make some form of government health insurance a juicy political morsel. We have for some years seen corporation contract practice become established, involving an increasing number of the profession in its service, and we are now witnessing the beginnings of fraternal, "cooperative," and other groups bidding for medical services on a contract basis. As rivalry among such groups grows, cheapness of service rather than a standard of quality and adequacy threatens to determine the trend.

As yet, the only answer of the organized profession to these problems has been the voicing of official antagonism to developments which almost every individual member of the profession recognizes as universal and inevitable, along with the threats and warnings of various ethics committees, economic committees, etc., against the members who are in ever-increasing numbers entering into various sorts of contracts for medical services.

With the European example of the futility and disaster of continuing such a course of official opposition to medical insurance, prepayment plans and the like, would it not be wiser for the profession to cooperate with those groups, lay and professional, that are attempting to work out such plans in an honest fashion? Would it not be valuable, with the threat of some federal or state insurance impending, for the St. Louis Medical Society to be able to say: "We have sponsored or permitted under our supervision and control the development

of such and such a number of prepayment medical service plans, some on an individual and some on a group service basis. We have found that the minimum cost for complete and adequate service, including hospitalization, is so and so. We have found that the best plan for allocating the fees to the physician engaged in the work is such and such. We have found that the principal points of difference between the insured groups and the profession are—" and so on.

If we were to embark on such a plan, we should not only meet the needs of the present, but we should anticipate the demands of the immediate future; we should drop much of the hypocrisy about contract practice among our own members and we should attract rather than repel the younger men in the profession, who, though they prefer to join with the ranks of organized medicine, realize that they can both make a living and render a service by entering one of the new insurance schemes, even though it keeps them out of the medical society.

I have attempted to discuss the problem of medical care for the indigent and potentially indigent patient. Such a program as I have suggested would, it seems to me, deal with facts and realities rather than with old formulae and pleasant but misleading dreams.

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## THE IMPORTANCE OF THE EARLY RECOGNITION OF NEUROSURGICAL CONDITIONS

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During the last twenty-five to thirty years many advances have been made in neurological surgery, both from the standpoint of diagnostic procedure and surgical technic. The mortality rate has dropped steadily during this time and is now lower than that of many other major surgical procedures. Much of this improvement is because neurosurgical lesions are diagnosed earlier than formerly and the patients come to operation while they are still in good condition. However, in spite of this great improvement, there are still many cases admitted to the hospital late in the course of the disease and in a condition which makes any surgical procedure more hazardous. Because of this I felt that it would be wise to speak to you concerning the early diagnosis of some of the more common neurosurgical diseases. It is, of course, impossible to cover all the conditions which are now treated by neurosurgeons for time will not permit. I have, therefore, decided to discuss the necessity for the early

diagnosis of trigeminal neuralgia, spinal cord tumors, brain tumors, some of the late results of head injuries and pyogenic meningitis.

*Trigeminal Neuralgia.*—Trigeminal neuralgia is a disease occurring for the most part in elderly persons and characterized by recurring paroxysms of severe pain confined to the distribution of one or more branches of the fifth cranial (or trigeminal) nerve. The etiology is unknown and there are no constant pathological findings. There is no satisfactory medical treatment and the surgical treatment consists in either peripheral alcohol injections for temporary relief or section of the nerve between the ganglion and the pons for permanent cure. The mortality rate from the operation of posterior root section has dropped steadily until it is now only approximately 0.5 per cent, and since with differential section sensation of the cornea may be preserved one ordinarily is no longer justified in postponing the surgical treatment. The diagnosis in most cases is fairly obvious; but in spite of the well established fact that surgery offers the only hope of cure many patients are still admitted after having gone through months of suffering while being subjected to all sorts of temporizing and useless procedures. The following case history illustrates this point:

### REPORT OF CASE

Male, aged 70, was admitted to the neurosurgical service of Barnes Hospital on April 17, 1935.

One year before he had a sudden excruciating pain in the right side of his face just below the eye. The pain was paroxysmal in type and was confined at first to the region of the cheek and nose. It was brought on by talking or eating but was never a constant ache and never extended across the median line. The paroxysms recurred at frequent intervals. He was given all sorts of medication without relief. Three months before admission all his teeth were extracted but the pain continued and for seven days prior to admission he had been kept constantly under the influence of morphine. His dread of this pain had become so great that he would not talk or eat and at the time of entry he was stuporous as a result of uremia. Urine contained much albumin and pus; his blood nonprotein nitrogen was 72 mgs. per cent. After several days of intensive treatment the uremia improved sufficiently to permit alcohol injection of the second division. This relieved his pain entirely for ten months; at the end of that time he came back to the hospital and a differential section of the posterior root was done. Since operation he has remained free from pain.

### COMMENT

The long delay to which this patient was subjected was responsible for the uremia which might easily have been fatal. Had he been sent into the hospital before its onset operation for permanent cure could have been done at once and one period of hospitalization would have been avoided. The removal of his teeth was an absolutely useless procedure but one to which the majority of patients with trigeminal neuralgia are subjected before the correct diagnosis is made. It should always be avoided for the use of plates is never a pleasant

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Read at the 80th Annual Meeting of the Missouri State Medical Association, Cape Girardeau, May 10-12, 1937.



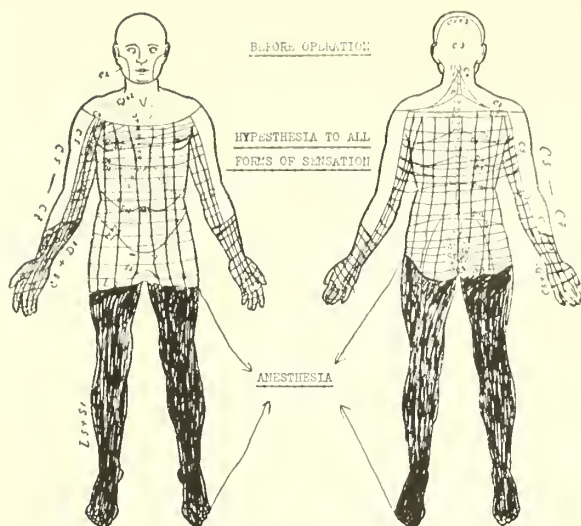


Fig. 1. Preoperative. The shaded areas show hypæsthesia and the dark areas anesthesia to all forms of sensation.

experience but it is made more difficult by the anesthesia which is necessary if the neuralgia be cured.

**Spinal Cord Tumors.**—The great majority of spinal cord tumors are extramedullary and from the standpoint of pathology are classified as benign. They arise for the most part from the meninges and a complete removal is possible in a very high percentage of cases. A cure should be accomplished unless the tumor has been present for such a long time that permanent damage has been done to the spinal cord. The common symptoms due to tumor in this region are motor weakness, sensory changes, spasticity and sphincter disturbances. They have been repeatedly described in the literature but nevertheless cases are still being missed as the following record will show.

#### REPORT OF CASE

E. W. S., male, aged 53, was admitted to the neurosurgical service of Barnes Hospital on August 5, 1936.

Four years before, this patient had pain in his right hand and arm which was diagnosed as neuritis. The symptoms gradually progressed until the extremity became weak, awkward and "numb." After a year he

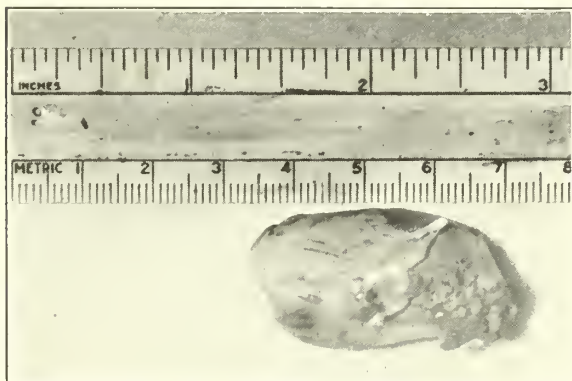


Fig. 2. Benign tumor weighing 5½ grams causing cervical cord compression.

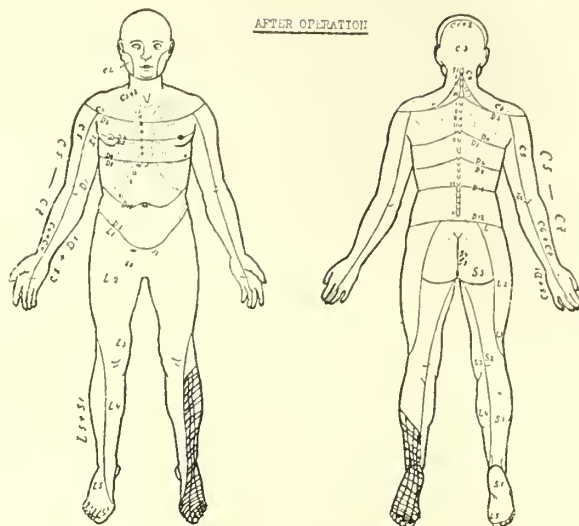


Fig. 3. Postoperative. Showing the marked disappearance of sensory disturbance after tumor removal. Only sensory loss is for light touch of left foot; no sacral loss. Patient walking with cane at this time and strength seems to be returning to all muscular groups.

noticed weakness of his right leg and because of this there was considerable difficulty in his walking. At this time he went to a well known hospital and among other things a spinal puncture was done. The total protein of the spinal fluid was very high but in spite of this no Queckenstedt test was performed and a diagnosis of syringomyelia was made. He was given deep roentgen ray therapy as a palliative measure and sent to the country for rest and fresh air. His condition gradually grew worse until at the time of admission he was bedridden, incontinent and greatly emaciated.

On examination he was found to have a spastic paraplegia with contractures of the knees. Both hands were weak, the right more than the left, and there was atrophy of the small muscles of his right hand. There was a sensory level at the sixth cervical skin segment (fig. 1). Lumbar puncture and Queckenstedt test showed a complete subarachnoid block, and the total protein on the fluid removed was 1200 mgs. per cent. The diagnosis of cervical cord tumor was made. Laminectomy was done and a tumor weighing 5½ grams (fig. 2) lying to the right of the cord at the level of the fourth, fifth and sixth cervical vertebrae was completely removed. The pathological diagnosis of this tumor was meningeal fibroblastoma. Postoperative course was uneventful. At the time of his discharge on August 30, 1936, he had regained his sphincter control and was able to walk with assistance. Now with the aid of a cane he walks perfectly well and the strength of his right hand is almost normal. His sensation has returned (fig. 3).

#### COMMENT

The failure to carry out a Queckenstedt test in this case was unfortunate, for as a result of this omission two years' time was lost. Not only was the pressure on the spinal cord allowed to go on for this time but the patient suffered both physical pain and the mental torture of the belief that his condition was hopeless. Fortunately there has been almost complete relief of symptoms since operation.

**Brain Tumors.**—The symptoms of brain tumors

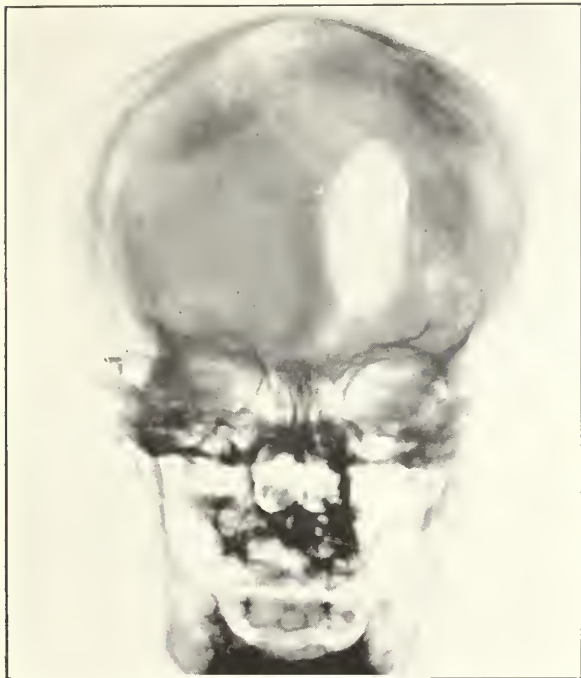


Fig. 4. Ventriculogram showing displacement of third ventricle to right and dilatation of right lateral ventricle as a result of left temporal lobe meningioma. The left ventricle was collapsed.

have been described many times. Sachs<sup>1</sup> has written an excellent book on the subject and recently we<sup>2,3</sup> have stressed the point that in adults these tumors frequently cause convulsions. As a result of the constant teachings of neurological surgeons early diagnosis is becoming much more common, but the admission of comatose patients who are poor surgical risks is still all too frequent. It is well known that the removal of a small tumor is technically easier than the removal of a large one, for as these tumors grow in size they increase in vascularity and the handling of the problem of increased intracranial pressure becomes more difficult. We also know that a considerable number of gliomatous tumors are malignant, and it is no less true of the brain than of other organs that one of the chief factors in the cure of a malignancy is prompt, early diagnosis. As a result of improved surgical methods an ever increasing number of patients with brain tumors are being cured. However, the result is certainly much less satisfactory if the patient is allowed to develop permanent damage before the diagnosis is finally made. I feel sure that practically all neurosurgeons are agreed that their most distressing experiences are with patients and frequently very young patients who have been allowed to become permanently and totally blind as a result of a perfectly benign tumor which is completely removed at operation. At times it is possible to effect a cure in spite of long-delayed diagnosis, but only if the tumor is slow growing and benign. The following case is an example of such a fortunate result.

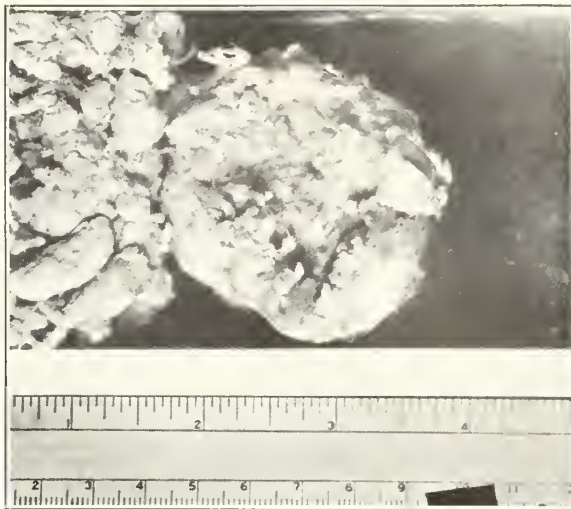


Fig. 5. Meningioma weighing 133 grams removed from undersurface of left temporal lobe.

#### REPORT OF CASE

B. M. S., female, white, aged 42, was admitted to the neurosurgical service of Barnes Hospital on July 27, 1936.

This patient was admitted in a comatose condition with a temperature of 103 and pulse rate of 96. Three years before she had had the first of a series of generalized convulsions. Since that time she has had at frequent intervals very severe headaches. For about a week she had been in a hospital in another city and during most of that time she had been comatose. There was a temporary improvement during one day and at that time it was possible to do rough visual field tests; these showed a right upper quadrantic homonymous hemianopsia. Ophthalmoscopic examination showed blurring of both disk margins with dark full veins. Neurological examination showed absent abdominal reflexes, hyperactive knee jerk and ankle jerk on the right side. Roentgen ray of the skull showed an increase in the convolutional markings. The patient was treated for several days with intravenous injections of glucose and subcutaneous saline. Although she remained stuporous, her temperature came to normal, so on July 30, 1936, a ventriculogram was done. This showed a lesion in the left temporal lobe (fig. 4). A left cerebral craniotomy was carried out immediately and a very large meningioma weighing 133 grams (fig. 5) was removed from the under surface of the temporal lobe. The following morning she was talking quite well and her postoperative course was entirely uneventful. She has remained well since her discharge from the hospital and has had no more convulsions. Her visual fields after operation were practically normal.

#### COMMENT

Without the aid of ventriculography a localizing diagnosis in this case would have been impossible for at no time was the patient conscious enough to cooperate for examination. The suspicion of brain tumor should certainly have been aroused by the combination of intractable headaches plus convulsions, and if visual fields had been done before the onset of stupor exact localization would have been possible. Fortunately the tumor was benign in type and grew very slowly so that in spite of the delay she recovered.





Fig. 6. Downward and outward displacement of left eye as a result of large orbito-ethmoidal osteoma.

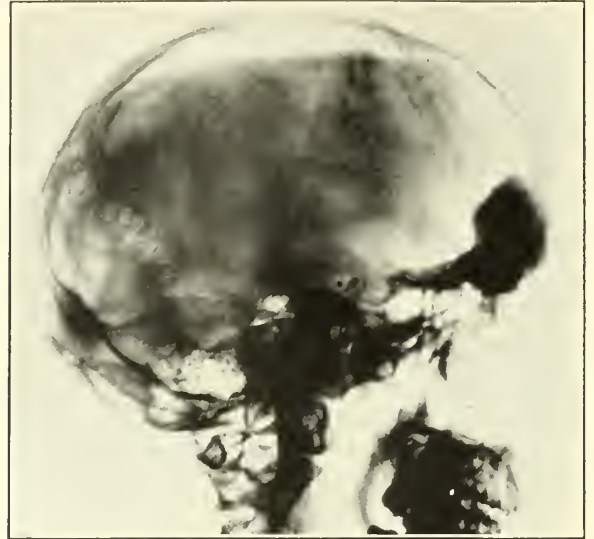


Fig. 7. Lateral view of skull showing large orbito-ethmoidal osteoma and the spontaneous pneumocephalus produced by its erosion of the dura.

*Late Effects of Head Injuries.*—A great deal of literature has accumulated during recent years on the subject of head injuries both as regards the acute injury and the late results. The subject of subdural hematoma has received much attention, as has posttraumatic epilepsy and the so-called posttraumatic psychoses and neuroses, so that to go into these conditions might be useless repetition. Occasionally, however, one sees a head injury with a much less common sequel, such as the following.

#### REPORT OF CASE

A man, white, aged 20, was admitted to the neurosurgical service of Barnes Hospital on July 5, 1935.

A little over two years before the patient was struck on the left side of his head and was unconscious for several days. He was then apparently well for about six months but since that time he has noticed a gradually increasing prominence of his left eye. There has been no interference with vision but this prominence of his eye has become quite noticeable. About a week before admission he began to have rather severe headaches and for four days before admission these had been extreme.

General physical and neurological examination showed nothing of importance except the prominence and downward displacement of his left eye (fig. 6). The veins were full in the left fundus but visual acuity was quite good and visual fields were normal. Roentgen rays of his skull showed a very large orbito-ethmoidal osteoma (figs. 7 and 8), and in addition there was a rather large collection of intracranial air. The diagnosis was orbito-ethmoidal osteoma which had eroded through the dura with the production of a spontaneous pneumocephalus. On July 10, 1935, a left frontal flap was reflected and the intracranial portion of the tumor, which was extremely hard, was removed. The tumor had eroded through the dura in several places; these openings were closed with silk sutures but because of the danger of stirring up infection the intra-orbital portion of the tumor was not disturbed. The patient's postoperative convalescence was uneventful and he was discharged on July 21, 1935. He was kept

under observation and on January 22, 1936, he was readmitted to the hospital for the removal of the remainder of the tumor. The old flap was reopened and after the roof of the orbit had been removed the infra-orbital part of the tumor was taken out (figs. 9 and 10). The entire tumor mass weighed 61 grams. Postoperative convalescence was entirely uneventful and he was discharged on February 6, 1936. His eye has returned to its normal position (fig. 11).

#### COMMENT

Orbito-ethmoidal osteomata were first accurately described by Cushing.<sup>4</sup> He reported four cases three of them having a definite history of preceding injury, and he described the spontaneous pneumocephalus which is so likely to develop. The chief danger is the development of meningitis by a spread of bacteria from the nasal sinuses to the subarachnoid space. There seems to be a definite relationship between these tumors and antecedent trauma. Since it is almost impossible to get a satisfactory picture of the orbito-ethmoidal junction linear fractures in this area might easily escape notice and these fractures could be responsible for the development of the tumor.

In the case presented there is no question but that the development of the severe headache and acute symptoms was due to the occurrence of the pneumocephalus and had treatment been long delayed a fatal meningitis would probably have occurred. Unilateral exophthalmos should always be carefully investigated; in this case a roentgen ray of the skull would have revealed the nature of the lesion long before the development of the pneumocephalus.

*Pyogenic Meningitis.*—Because of its high mortality rate pyogenic meningitis has long been the most dreaded complication of otitis media or sinus infections. Since no method of treatment has been successful in reducing the mortality rate to a mini-



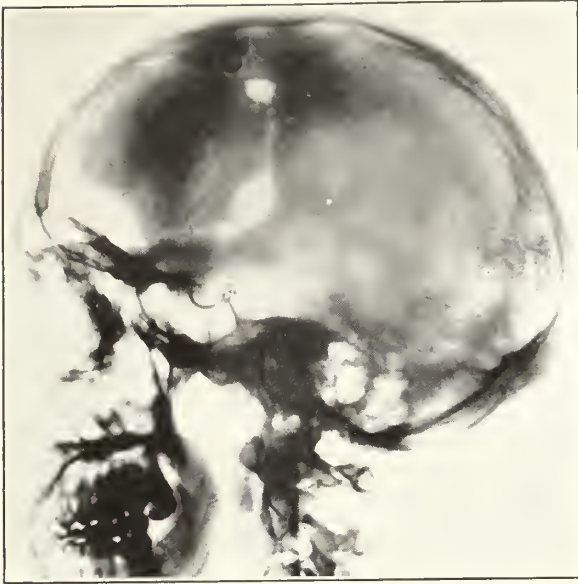


Fig. 8. Same as figure 7 after removal of tumor.

mum I feel that any form of therapy is justifiable if it will increase the percentage of recoveries, provided the method is clinically sound.

Over a period of years we<sup>5</sup> have found that such an increase in the number of recoveries is brought about by a regime of treatment which has as its basis (1) continuous early drainage of the sub-arachnoid space and (2) the administration of large quantities of fluid. It must be understood, however, that this method is only applicable to the common forms of pyogenic meningitis and should certainly not be used in tuberculous or meningococcic cases. It is in our experience of no avail in pneumococcus meningitis for the exudate rapidly becomes so thick that drainage will not continue.

Until recently lumbar laminectomy was done for drainage but during the last eighteen months we have been using a ureteral catheter which is inserted through a large lumbar puncture needle. This form of drainage is usually satisfactory but in a few instances the catheter has tended to block and open operation (laminectomy) has been resorted to in these cases.

In order to determine the efficacy of the method, Reynolds and myself<sup>5</sup> recently reviewed all the cases of pyogenic meningitis from the Barnes and the St. Louis Children's hospitals. It must be understood that no exaggerated claims are made for we realize that the method of treatment is not a panacea and by no means do all the cases recover. However, the following tables bear out our contention that it is a distinct improvement over the use of repeated lumbar punctures.

For purpose of comparison, a tabulation has been made of the cases of pyogenic meningitis, excluding those due to pneumococcus, from the Barnes and St. Louis Children's hospitals (table 1).



Fig. 9. Same as figure 6, ten days after removal of tumor. Since this was made the eye has assumed an entirely normal position.

Table 1. Summary of Pyogenic Meningitis Cases

Type of Treatment	Number	Recovered	Per Cent Recovered	
Non-surgical	258	21	8.14	This includes 82 cases in which no organisms were grown on culture.
Cisternal drainage	8	0	0	
Lumbar drainage	61	15	24.5	This includes 32 cases in which no organisms were grown on culture.

There are 258 cases which have been treated non-surgically with twenty-one or 8.14 per cent recoveries. In eighty-two of these no organisms were grown on culture. There are eight cases treated by cisternal drainage; all died. Sixty-one cases have had lumbar drainage and of these fifteen, or 24.5 per cent, recovered. Notwithstanding that organisms were not found in every case all had the classical clinical signs of meningitis and there was marked increase in the spinal fluid cell count.

However, in order to be more certain and to combat the skepticism with which some men regard cases diagnosed as meningitis on clinical rather than on laboratory evidence, a further subdivision has been made (table 2).

Table 2. Bacteriologically Proved Pyogenic Meningitis

Type of Treatment	Number	Recovered	Per Cent Recovered
Nonsurgical	176	7	4.3
Cisternal drainage	6	0	0
Lumbar drainage	29	9	31

We have included as cases of bacteriologically proved pyogenic meningitis those with positive spinal fluid cultures and accepting as positive only fluid removed by lumbar puncture, as follows: There were 176 cases treated by nonsurgical means. Of these seven, or 4.3 per cent, recovered. Six

cases were treated by cisternal drainage alone but all died. Twenty-nine cases had lumbar drainage; of these nine, or 31 per cent, recovered.

In practically all the cases that recovered the diagnosis was made promptly as the following case history will show.

#### REPORT OF CASE

A boy, white, aged 7, was admitted to the St. Louis Children's Hospital on August 4, 1935.

The day before admission the patient fell on a hedge while playing. A stick entered his right nostril causing nose bleed which lasted several minutes. Following this there was no evidence of cerebrospinal rhinorrhea. The morning of admission he complained of headache and vomited and that afternoon complained of stiffness of his neck. His father, a physician, found that he had fever. Dr. E. H. Rohlfing saw him soon afterward and sent him into the hospital with a diagnosis of meningitis.

He was very drowsy. His temperature was 102.5. There was marked rigidity of his neck and the Kernig was positive bilaterally. His leukocyte count was 16,600. A spinal puncture showed very cloudy fluid with 10,800 cells, chiefly of the polynuclear variety. No organisms were seen on smear. He was seen by Dr. M. F. Arbuckle who found some trauma to the right middle turbinate with moisture high up strongly suggestive of a slight cerebrospinal fluid leak.

The impression was that this was a rapidly progressive traumatic meningitis and that his only chance for recovery was with early drainage, therefore a lumbar laminectomy for drainage was done immediately. His temperature dropped soon after the drainage. He was rational, alert and his headache was relieved. The culture made before operation was reported as showing no growth, so cultures were made on several successive days by inserting a sterile applicator down into the drain thus avoiding skin contaminants. These all showed hemolytic staphylococcus and influenza bacillus. He was very cooperative in taking fluids. On several days he drank more than six liters and never less than five.

Staphylococcus toxoid and anti-influenza bacillus serum were given by Dr. Rohlfing. His general condition was excellent until the fourteenth postoperative day when drainage stopped. He was extremely irritable and his temperature rose to 104.4. Under nitrous oxide anesthesia lumbar puncture was done and 50 cc. of fluid removed. The cell count was 2000 with 60 per cent polynuclears and 40 per cent lymphocytes. No organisms were seen. Eight cc. of anti-influenza bacillus serum was given intraspinally. His temperature dropped to 99.5 but the following day rose again so the spinal puncture and the serum were repeated. Punctures were then done daily and on the twentieth postoperative day influenza bacillus was again grown on culture. About this time he developed a cough with purulent sputum. Dr. Sherwood Moore interpreted a roentgen ray of his chest as showing an early lung abscess on the right side. On the twenty-third postoperative day his spinal fluid culture was again positive for *B. influenzae* and on the twenty-fourth day his temperature rose to 104.8. It was felt that drainage was again indicated but because of his chest findings a general anesthetic was contraindicated. Therefore, using novocain a large lumbar puncture needle was inserted into the lumbar canal and through this a number six ureteral catheter was introduced. The catheter drained very freely. His temperature dropped to normal. On the twenty-seventh day he complained of headache and nausea and his pulse and respirations became slow. Believing that this was due to the very free drainage of spinal fluid the end of the catheter was

blocked with bonewax and the symptoms immediately subsided. Drainage was allowed intermittently for the next forty-eight hours and the catheter was then removed. He remained symptom-free and was discharged on the thirty-eighth day. He is perfectly well and normal in every respect now.

#### COMMENT

Although the staphylococcus hemolyticus grown on culture after drainage is open to question there can be no doubt about the influenza bacillus. This places influenza bacillus meningitis in the category of cases suitable for drainage although the vast majority of cases of this type are being handled solely by medical treatment. The early and continued drainage was undoubtedly the factor responsible for his recovery. It is doubtful if the serum played an important rôle but in similar cases it seems worthy of trial.

The etiological factor was unquestionably the preceding trauma, the organisms entering through the region of the cribriform plate.

#### CONCLUSIONS

The early diagnosis of neurosurgical conditions is essential if the mortality rate is to be progressively lowered. No matter how brilliant the development of surgical technic and mechanical diagnostic aids good surgical results can only be obtained on patients who are good surgical risks.

University Club Building.

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Ernst Wolff and Samuel Hurwitz, San Francisco (*Journal A. M. A.*, Dec. 18, 1937), discuss their use of tuberculin ointment in the diagnosis by the patch test of 1,000 new cases. The ages of the patients ranged from 3 months to 15 years. The results have been better than with any other percutaneous application yet employed. The agreement between the ointment patch test and the intracutaneous test with 0.1 mg. of old tuberculin in 1,075 observations was 98.2 per cent. This corresponds closely to figures previously reported for some 800 observations. Discrepancies occurred only in clinically latent cases. The ointment test was positive in every case of active tuberculous disease. Given an ointment test which is clinically equivalent to the Mantoux, its advantages are several. The ease and speed of application lend the patch test to general use in private practice and public health work. It overcomes the objection of psychologic shock and pain caused by the use of the hypodermic needle. No false positive reactions are encountered, as a control test is an integral part of the method and the area of the skin tested is protected as a routine by the adhesive plaster. The ointment is comparatively easy to prepare, is relatively inexpensive and has been found to retain its potency for a period of at least four years.



## ERRORS OF REFRACTION IN CHILDREN

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It has long been recognized that a knowledge of the physical status of each and every school child is desirable, both from the standpoint of the child whose handicaps should be understood and sympathetically appraised as well as from the standpoint of the teacher who is so often baffled by the unexplained ineptitude of certain of her pupils. Efforts in this direction have sometimes been thwarted by parents who have regarded an examination of their children by school physicians as an improper usurpation of their right. No such objections have been raised in connection with the estimation of the visual acuity in school children. Such examinations, while by no means universal are becoming increasingly popular especially in the larger towns and cities as they can be conducted quickly and without trained assistance. When subnormal vision is discovered many of these children are brought to the ophthalmologist for an appraisal of their ocular difficulties.

In the management of these cases I consider that the ophthalmologist has a responsibility as great as that which he assumes when he accepts patients who are definitely threatened with impaired vision or blindness. The care with which the examination is made and abnormal factors evaluated may determine the degree of useful vision for the remainder of the youngster's life.

The importance of routine visual testing in the schools is demonstrated by the many cases in which poor vision or ocular disease is unearthed which was unsuspected by the child or his parents. Lack of progress in school may remain unexplained until a notable error of refraction is found in an otherwise normal child, or until the child is old enough to realize that his vision is not as good as it should be. We are constantly being reminded of the importance of normal early development and impressions. A visual handicap may cause a retardation that may be difficult to overcome.

From the records of 20,000 cases Smukler<sup>1</sup> reports that from 60 to 70 per cent of the children sent to the clinic for correction of refractive errors were classified as backward, mentally deficient or habitually not promoted. Furthermore, a follow-up after their refractive errors had been corrected showed that from 70 to 80 per cent of these children were able to maintain the normal rate of progress.

Unfortunately, reports such as this from many sources emphasizing the need for spectacles by children have been combined to produce much misleading propaganda. Alarming figures have been broadcast by associations which exaggerate the number of children in need of optical aid. One

council has advertised widely that one fourth of all the children in this country have defective eyesight. We must be suspicious of such estimates, especially when they do not conform with the experience of ophthalmic physicians.

There is a need for conservatism in the treatment of asthenopia in children. Before glasses are prescribed for children, especially those with moderate or slight errors, there should be a careful assembling of all the facts of the case. Attempts should be made to differentiate between complaints having their origin in uncorrected ametropia and those which have a different source. Temporary decrease in vision may accompany conjunctival irritation and faulty habits in posture may be the reason for the book held too near the eyes. In addition to a complete ocular examination which should include external and ophthalmoscopic studies and a test of the function of the extraocular muscles it may be necessary to subject the child to a general physical survey in order to appreciate all the aspects of the case.

Upon finding that the child has subnormal vision various assumptions are usually made by the parents. The most frequent assumption is that glasses are needed. Whether this assumption is or is not correct can only be determined by the complete examination by the eye physician and not by the hit-or-miss methods employed by the nonmedical tester.

For the determination of vision in children many types of test cards are available. For very young children picture cards as designed by Green-Ewing (chair, star, cross, etc.), or the widely used E chart are most desirable. Painstaking and patient efforts to gain the confidence of the child will be rewarded by a knowledge of the true visual acuity. Before employing pictographs the examiner should assure himself that the child is familiar with all on the test card in order to avoid a false impression of vision lower than actually exists.

The eyes of the newborn are with few exceptions hyperopic (farsighted). Seisiger<sup>2</sup> in a systematic examination of the eyes of 500 infants from 1 to 8 days of age found all hyperopic. The average hyperopia was 4 diopters. Such eyes tend to lengthen anteroposteriorly and at adolescence reach the stage of emmetropia. The ideal condition of emmetropia (normal sight) is usually not attained so that most eyes remain hyperopic.

In a smaller percentage of cases the eyeball continues to elongate and becomes nearsighted or myopic. Emmetropia should therefore be regarded as a stage in the development of the normal eye. In the opinion of Kronfeld<sup>3</sup> a farsighted eye of + 1.25 diopters should be regarded as emmetropic. His view is based on the greater frequency of this degree of hyperopia and the tendency of such eyes to be without astigmatism.

Tassman<sup>4</sup> in recording the errors of refraction in 11,743 patients examined at Wills Hospital reported that hyperopia decreased in succeeding age groups

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and myopia increased in the percentage of the total. This coincides with the views of most writers as far back as the early reports of Randall in 1885.

As the normal elongation of the globe tends to diminish hyperopia and may eventuate in myopia it is interesting to remember that the eye shares with the brain the peculiarity that both have a precocious growth during childhood. Keith<sup>5</sup> states that by the end of the fourth year the brain has grown to about 84 per cent of its full size, the eye to about 78 per cent, while at this age the body has attained only 21 per cent of its adult size. Perhaps it is fortunate that most of us are born with hyperopia of 4 diopters or we should all be nearsighted in adult life.

In addition to the refractive errors mentioned most eyes have some astigmatism which contributes to poor vision or to the production of symptoms of asthenopia according to the degree present. Some authors classify astigmatism as physiologic and pathologic. Kronfeld arbitrarily considers astigmatism of one diopter as pathologic.

In order to estimate errors of refraction accurately in children the use of a cycloplegic is essential. In most cases a child should have the benefit of a test under atropin, the strength of the solution varying with the age of the child. For children up to 10 years of age  $\frac{1}{2}$  per cent solution should be used and for those over 10 years 1 per cent is preferred. On account of the active state of the accommodation in children it is almost impossible to attain accurate refractive estimates without suspending the accommodation. Objections on the part of the parents to the use of cycloplegics are easily overcome when the advantages of such testing are explained. Instructions are given for use of the atropin drops three times daily for three days. If pressure is made over the internal canthi with thumb and forefinger immediately after the drops are instilled the passage of atropin to the nose is avoided. This tends to prevent the occurrence of mild systemic reactions such as dryness in the throat and flushing of the face. Dark glasses are advised for the period during which the pupils are dilated.

After preparation for the examination under cycloplegia the error of refraction is measured objectively with the retinoscope. Since this estimation must be relied upon entirely in very young children several carefully repeated tests should be made. For the child of from 5 to 8 years the retinoscopic findings may be supplemented by subjective tests which can often be made with surprising accuracy. Fan charts for astigmatism, the cross cylinders and other aids used in adult refraction can be employed to advantage at times in very young patients. These subjective tests should always be attempted as a check on the objective retinoscopic findings.

Investigation of the muscle balance should be made in every case. The maddox rod and parallax

test may be used and the cover test is adaptable to very young children. The presence of squint of low degree must not be overlooked. The phorias often modify the prescription for glasses and their presence may determine whether glasses should be prescribed or not. Ophthalmologists who see many children who are in need of glasses also see children wearing glasses needlessly. As most children are hyperopic normally small degrees of hyperopia unless complicated by a moderate amount of astigmatism should not require the use of spectacles in childhood. When we consider the amplitude of accommodation in children it becomes doubtful whether weak plus lenses are of any help to them. For example, a child of 10 years has approximately 14 diopters of accommodative power with a near point of 7 cm. A child of 15 years has 12 diopters of accommodative power and his near point is 8.5 cm. As age advances the power of accommodation diminishes, the near point recedes and moderate amounts of hyperopia become increasingly important in the production of asthenopic symptoms. It is ridiculous to suppose that plus .25 or plus .50 sphere is of help in reading to children when the available accommodative power is so great in proportion to the slight additional help intended. The nearsighted child should have glasses for constant wear even if the amount of myopia is minimal. The myopia should be corrected fully but should not be over corrected, a mistake often caused by the omission of cycloplegia.

Ophthalmic physicians should insist on the wearing of glasses by school children and those of pre-school age when it is proper to prescribe them. It is proper to prescribe them when this can be done with distinct advantage to the patient either for improvement in vision or for the relief of symptoms due to avoidable eye strain. Other glasses are needless.

It is interesting to note the increased use of non-shatterable glass as a medium for corrective lenses. Originally used mainly for the protection of eyes of industrial workers in hazardous occupations it has become more popular for children's spectacles and glasses worn by participants in active sports. The newer type of nonshatterable glass which is not laminated can be finely ground, gives clear visual perception and is only slightly heavier than ordinary glass. With this type of lens available there can be no objection to the use of spectacles based on the fear of injury to the eyes from breakage of glasses.

"Rest glasses" are referred to by patients and optometrists as though they were something which could be given and worn to advantage without the necessity of accurate fitting. There is no such thing. The only correct glass is one that has been prescribed after a careful measurement of each eye for its individual defect, and this should be done with just as much care in the child as in the adult.



## SUMMARY

1. There is much misleading propaganda which tends to exaggerate the number of children in need of glasses.

2. Hyperopia in moderate amounts is a normal and fortunate refractive state in the eyes of children and unless complicated by other factors does not indicate a need for glasses.

3. Glasses should be prescribed when they are of distinct advantage to the patient but only after a complete examination of the case and a careful evaluation of all factors and complaints.

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## FATAL NOMA IN INFANCY

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## CASE REPORT

On November 2, 1936, a girl, aged 19 months, was referred to the hospital by Dr. A. L. Meredith, Prairie Home, because of a large necrotic area on the lower lip. Three weeks previously she had struck her lip against her carriage. Swelling out of proportion to the force of the blow followed. A week later and two weeks before I saw her the injured area turned black; anorexia and fever developed. My examination showed well demarcated through and through gangrene of the left half of the lower lip. Hyperpyrexia with a relative leukopenia (white blood cell counts from 5300 to 5500) and lymphocytosis constituted the only other significant findings. On the day of admission 150 cc. of citrated whole blood containing 50 mgs. of neosalvarsan was given as a transfusion and the local lesion was excised with the high frequency current. The wound was cleansed with peroxide of hydrogen and dusted with neosalvarsan. The immediate



Fig. 2. Before excision of lesion.

response to this treatment was a drop in temperature, a return of appetite and increased cheerfulness. Two weeks after admission, and despite further transfusions of whole blood containing neosalvarsan, the gangrenous area extended toward the ear. The child died three weeks after admission to the hospital. There was no autopsy but microscopic examination of the excised tissue by Dr. T. J. Kelly, Jefferson City, revealed edema of the squamous epithelium, subjacent inflammation and extensive tissue necrosis. Aerobic culture of the material revealed gram-positive and gram-negative cocci and streptococci and a few gram-negative bacilli. Anaerobic cultures revealed only gram-positive and gram-negative diplococci and streptococci. The pathologic diagnosis was gangrenous stomatitis.

## ANIMAL EXPERIMENTS

An attempt was made to reproduce the disease in rabbits by the intravenous and subcutaneous injection of the organisms recovered from the original lesion. Protocols of these experiments follow:

Rabbit No. 1. Mixed aerobic culture injected intravenously. Animal died in eighteen hours. No significant pathological findings.

Rabbit No. 2. Mixed aerobic culture injected subcutaneously into ear. On the third day the ear was swollen, sore and cyanotic. On the eighth day abscesses developed at the site of injection. These abscesses healed slowly, recovery being

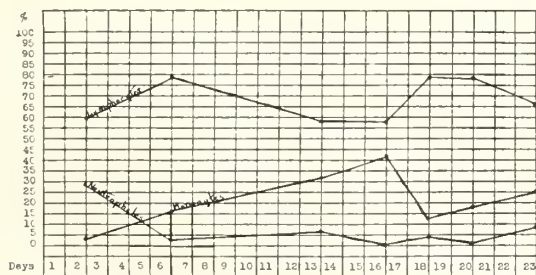


Fig. 1. Lymphocytosis in a case of noma.



Fig. 3. After excision of lesion.



complete on the thirty-fourth day. Cultures taken from them revealed gram-positive diplococci.

Rabbit No. 3. Gram-positive diplococci injected subcutaneously into ear. On the sixth day the ear became slightly cyanotic and the animal refused food. On the eighth day abscess formation took place; healing was uneventful being complete on the twenty-second day.

Rabbit No. 4. Gram-positive diplococci injected intravenously. The animal continued in apparent good health for twenty-four days, the end of the period of observation.

Rabbit No. 5. Gram-negative diplococci injected intravenously. On the twelfth day a sore formed in the inner ear; this was still slowly healing on the thirty-second day, the end of the period of observation.

Rabbit No. 6. Gram-negative diplococci injected subcutaneously into ear. On the third day there was localized cyanosis and on the sixth day a small abscess appeared. On the twenty-second day, the end of the period of observation, the abscess was still healing.

Rabbit No. 7. Gram-negative bacilli injected intravenously. Death occurred in twenty-eight hours; autopsy revealed no significant findings.

Rabbit No. 8. Culture of gram-negative bacilli injected subcutaneously into ear. A slough, probably of traumatic origin, appeared on the eleventh day.

#### SUMMARY

1. A typical case of noma, fatal to a 19 months old female is reported. Excision of the lesion and repeated transfusions of citrated whole blood containing neosalvarsan produced only temporary improvement.

2. Several different bacteria were cultured from the excised tissue. With none of them was it possible to reproduce the disease in rabbits.

3. The bacteria found in the original necrotic area were probably secondary invaders and not responsible for the disease; the original injury apparently sufficed to produce extensive tissue gangrene.

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#### DIAGNOSTIC METHODS IN UNDULANT FEVER (BRUCELLOSIS) WITH RESULTS OF A SURVEY OF 8,124 PERSONS

S. E. Gould, Eloise, Mich., and I. F. Huddleson, East Lansing, Mich. (Journal A. M. A., Dec. 11, 1937), describe briefly the performance and interpretation of the laboratory methods which at present are believed to be most useful in the diagnosis of undulant fever (brucellosis) and report some of the results of a survey of the incidence of brucellosis in a large county hospital. An unusual opportunity to study the incidence of *Brucella*

infection presented itself at Eloise Hospital and Infirmary, whose milk supply was partly infected with *Brucella*. All persons in the institution were first tested intradermally with brucellergin. Among 8,124 persons tested, 845, or 10.3 per cent, showed positive brucellergin reactions. The incidence roughly paralleled the average length of stay of the various groups in the institution. The incidence was lowest among the hospitalized group (6.2 per cent), whose average stay was the shortest, and greatest among the mental patients (15.4 per cent), whose average stay was the longest. The brucellergin test was found to be the most sensitive test in the diagnosis of brucellosis. If the test is negative, brucellosis will usually be ruled out. If the test is positive, the opsonic test should then be performed to determine whether infection or immunity is present. A negative agglutination tests does not rule out *Brucella* infection. The agglutination test is diagnostic only in a small percentage of cases and gives no information as to the immune status of the subject. Carriers of *Brucella* may be of some importance in the spread of the disease.

#### ORAL ADMINISTRATION OF PROSTIGMIN IN TREATMENT OF MYASTHENIA GRAVIS

Henry R. Viets, Roger S. Mitchell and Robert S. Schwab, Boston (Journal A. M. A., Dec. 11, 1937), present brief case histories of eighteen patients who have been taking prostigmin by mouth continuously for from one to fourteen months. Some were known to them years ago; others have come to the clinic only recently. The former patients were treated in the past with aminoacetic acid, ephedrine and other drugs, often with considerable effectiveness. Since the advent of the prostigmin test of Viets and Schwab, the number of patients entering the clinic has greatly increased, fifteen having been added from June, 1936, to July, 1937. Prostigmin is supplied in tablets of 15 mg. each for oral administration. The authors' doses have been from four to twelve tablets a day. The initial dose is spaced at intervals of four hours, usually four tablets a day. This dose is often too small to maintain muscular efficiency, and it must be increased to from six to twelve tablets in twenty-four hours. A maintenance dose, established in two or three weeks, will average from four to nine tablets a day. For patients taking prostigmin by mouth, the spacing of the doses has been of considerable aid in maintaining muscular efficiency during the waking hours. With six tablets a day, the doses are taken at 6 and 9 a. m., 12 noon, and 3, 6 and 9 p. m. The dose may be double before meals, making an intake of nine tablets, or 135 mg. of prostigmin, a day for an adult. This has proved to be the common maintenance dose for a severe case of myasthenia gravis. A few patients require two tablets at each of the six periods. Unequal spacing in some cases may give the best results. Thirty milligrams of prostigmin administered orally is, in most instances, equivalent to 0.5 mg. of prostigmin in a 1:2,000 solution given intramuscularly. The effect, however, is not so prompt and is less likely to be complete. The response comes in about one half hour, reaches a maximum in one or two hours and wears off in three or four hours. During this period the paretic muscles regain their power in part or in whole. The visceral disturbances are variable. When disagreeable symptoms are induced by prostigmin given orally they may be controlled by tincture of belladonna in doses of from 3 to 15 drops or by atropine sulfate, 1/200 grain (0.3 mg.) given with the prostigmin. Twelve of the eighteen patients took belladonna or atropine, the dose varying in amount with the abdominal discomfort. The visceral symptoms are often absent when only one tablet of prostigmin is taken at a time.

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JANUARY, 1938

## EDITORIALS

### MEDICAL PATENTS

There has been much discussion recently on the subject of medical patents. The monetary rights of the discoverer, of the holding corporation, commonly a university subsidiary, of the rights of other scientists working in the same field, and of the public at large, that body to whose benefit all medical discoveries eventually revert, have been considered. But there is one group whose interests seem to have been largely overlooked. It seems to us pertinent to draw attention to the rights of this group for while subservient to all the others without them the general public would never receive the benefit of medical research. We refer to the ethical pharmaceutical manufacturer.

The process through which the discovery of the laboratory is transmuted to the use of the millions is sometimes overlooked. The research which commercial manufacturers subsidize, either through direct contributions toward the expenses of the laboratory or through the provision of drugs for clinical investigation, may amount to a sizable sum. For example, Sir Frederick Banting gave full credit to one of the large pharmaceutical manufacturers for the contributions which they made toward his investigations and without which aid he might have been prevented from the epoch-making discovery of insulin. Before the new product was distributed through the usual trade channels this company sent thousands of dollars worth of it to clinicians throughout the country in order that extensive trial might prove its safety and develop rules to govern its clinical application. In this instance the pharmaceutical house was enabled to reimburse itself through a provision in its contract with the corporation holding the patents on insulin that it was to have exclusive marketing rights for one year.

On the other hand, in the average instance no such provision is found in the contract offered the manufacturer by the holding corporation controlling a new medical discovery. In still other instances commercial organizations which have de-

veloped a new product have no protection against the predatory acts of competitors. Indeed, in the case of insulin mentioned above the contract offered by the patent holder provides that any licensee who discovers a drug useful in the treatment of diabetes must assign all of his rights in the new product to the corporation which in turn may license all of his competitors to prepare the new product. This would appear to us to be unjust confiscation and illegal appropriation of the rights of the originator of the new product. It will lose to him the privilege of acquiring a return on his investment in research and clinical investigation commensurate with his outlay.

It seems that in fairness to the ethical drug manufacturer some provision should be made in any new system of patent assignments that will insure his protection. It does not seem unreasonable now, nor did it seem unreasonable at the time that insulin was first prepared commercially, that the firm willing to spend of its funds in order that the result of laboratory investigation might be brought to the bedside of the patient should be enabled to earn a reasonable return on its investment.

If some such provision is not included in the present discussion the question of the advisability of commercial development of laboratory investigation is likely to be questioned and thus prevent the immediate application of research. The manufacturer who feels that he cannot earn a return on his investment will be slow to perform the vital function that until now has made new drugs easily and quickly available. There is a difference between the preparation of small amounts of a new drug in a test tube in the laboratory and the manufacture of that same product in commercial quantities. Chemists must find ways and means of doing on a large scale what is extremely difficult and time consuming on a small scale. Expensive as was insulin in its early days its cost would have proved prohibitive to all but the wealthiest patients had it to be prepared according to the complicated technic of Banting and Best.

It is for these reasons that we venture to present this easily forgotten aspect of the problem of medical patents. The public have a right to expect that the results of medical investigation be made cheaply and quickly available to them. This implies the existence of the middle man, the commercial manufacturer whose ingenuity is often hard taxed to find commercially feasible methods of preparing drugs. If his interests are not safeguarded there is the possibility that a deplorable lag will come to exist between the culmination of an investigation of pure research and its application to the patients for whose benefit it was inaugurated. At the present time the commercial manufacturer is anxious to cooperate with clinicians in the development of new products which may be of value to the profession generally. In the laudable endeavor considerable sums may be expended without the emergence of a new product which is to prove clinically useful.



Hence the importance of providing the manufacturing pharmacist with safeguards and the right to such financial return that he may not be deterred from performing his vital function in the development of new therapeutic agents.

After all, provision of such protection appears to be only a matter of simple justice. It will tend to stimulate rather than impede research. The assurances so offered will make the ethical pharmaceutical manufacturer anxious to subsidize pure research, to provide adequate clinical trial of a new preparation before offering it for general distribution. Those agencies whose deliberations will decide the course of any new system of assigning medical patents will do well to consider the economic rights of the manufacturer without whom the products of research would be brought only lag-gardly, if at all, to the bedside of the patient.

### IRRADIATION FOR RHEUMATIC CARDITIS

Heart disease was responsible for nearly one fifth of the deaths which occurred in this country in 1935. Of these, many were in the age group past 45, that increasing portion of the population in whom the senescent process may be expected to induce exhaustion of the cardiac mechanism. Between 1.5 and 2.0 per cent of the general population and approximately 1.0 per cent of the children of the country have some form of heart disease. Of the latter group rheumatic infection is responsible for four fifths of all cases<sup>1</sup> although some surveys<sup>2</sup> reveal a lower incidence.

Rheumatic carditis is but one phase of the disease generally described as acute rheumatic fever. In 95 per cent of persons so afflicted heart involvement occurs during the first attack and is practically always found in those individuals suffering from more than one attack. The immediate (10 to 12 per cent) as well as the subsequent mortality is considerable. When death does not supervene the period of enforced inactivity may extend over several months. The more frequent the recurrences the more extensive the involvement of the heart. For these reasons any new therapy which promises to reduce the duration of the acute infection, to lessen the probability of recurrence and to shorten the period of invalidism deserve careful scrutiny and more exhaustive trial.

Wilson<sup>1</sup> has shown that four fifths of the children suffering from the rheumatic syndrome experience a recurrence within three years of the first attack. Indeed, inspection of the charts of his 412 cases suggests that the disease is almost continuous over a period of years. Roth<sup>2</sup> found that of 488 children with heart disease, approximately two thirds had the rheumatic type and that of these 85 per cent had a recurrence within three years of the initial

attack. These figures are cited merely in order to remove any doubt as to the severity of rheumatic carditis and to emphasize the considerable invalidism that ensues.

Therapy, in general, is relatively disappointing. Elimination of focal infection, the administration of salicylates, careful attention to rest and general nutrition, change of environment including removal to warm climates, all of these have been tried.

The effect of roentgen ray exposure of the heart has been studied extensively in animals. In general, disturbances of rhythm and of the electrocardiographic complex and degeneration of heart muscle have been observed. On the other hand, it seems to be generally agreed that irradiation of chest or mediastinal tumors in human beings (using smaller doses than in animals) produces no detectable change in the heart, examined electrocardiographically or at necropsy. Roentgen ray therapy has been used successfully in the management of localized infections such as acne and furunculosis, even in erysipelas. Scar tissue, as found in cicatrices of the skin and keloids may be softened by this modality. With this premise Levy and Golden<sup>3</sup> began in 1926 to irradiate the heart affected by the rheumatic process.

They chose a varied group of patients with rheumatic heart disease. About one tenth of a skin erythema dose of the rays was administered front and back, a course consisting of our exposures at intervals of two weeks. Further courses were given after a rest of from one to three months. Occasional patients received as many as twenty-five exposures, the average, nine. In general, clinical improvement was manifested and occasionally such improvement was so closely related to the beginning of radiation therapy as to suggest a cause and effect. Striking changes in the electrocardiographic tracing were recorded. The usual unpleasant by-effects of roentgen irradiation were noted.

The authors are at a loss to explain the beneficial effects observed. They suggest the possibility that the rays have a desensitizing action so that the heart becomes less vulnerable to the allergen responsible for the rheumatic syndrome. The relief of pain in those patients without aortic insufficiency (and consequently without impaired coronary circulation) may be ascribed to the mobilization of scar tissue.

Recently Levy and Golden<sup>4</sup> reported their experience with this form of therapy in forty-eight patients observed over the last eleven and a half years. One third are dead; many of them might have been expected to die anyhow because of the extensive damage already suffered by the myocardium. Of those living approximately two thirds are described as improved over a period of time varying from

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3. Levy, R. L., and Golden, R.: The Treatment of Rheumatic Carditis by Roentgen Irradiation of the Heart, *Am. Heart J.* 4:127, 1928.

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less than one year to over eleven years. From a statistical and interpretative point of view their report leaves much to be desired. One could easily cite cases from his own experience in which the degree of improvement shown by the patient was at least the equal of that reported. The illustrative case reports are in the older age groups. Yet it has been conclusively demonstrated that the greatest severity of the rheumatic syndrome is in the prepubescent age group; after the age of 12 recurrence of the initial attack becomes less and less frequent, the prognosis being increasingly better. For example, in a 37 year old female confined to bed for eight months on account of a low grade fever and with the signs of a rheumatic mitral stenosis, tonsillectomy was without benefit. Yet within a few hours of the first irradiation the temperature fell to normal. After eight treatments during a period of six months the patient was able to resume her regular household duties and for the last five years has led an active social life. Another woman, aged 18, when first given roentgen therapy was able to go through a normal pregnancy nearly ten years later without recurrence of rheumatic activity.

The relative safety of roentgen ray treatment may be assumed from the autopsy findings in one patient who died of acute cardiac insufficiency secondary to sinus infection and who had received nine radiation exposures to the heart. Although there were numerous scars in the myocardium as well as an occasional Aschoff body the pathologist was of the opinion that the scars found did not result from the treatment employed.

Despite the fact that it is difficult to compare the results achieved by these investigators with the results generally found in persons with rheumatic carditis it is entirely possible that further trial of the method is justifiable. Particularly is it difficult to interpret the statement that 70 per cent of these patients showed clinical improvement. Knowing, however, the progressively downward course followed by most individuals with this syndrome a therapy for which 70 per cent improvement is claimed is worthy of more extensive trial. In this connection the conclusion expressed by the authors that "cases with low grade activity and without signs of congestive heart failure appear to be most benefited" should be kept in mind. Of course, those are the cases that ordinarily do best under any therapeutic regime.

#### THE JOURNAL PROGRESSES

THE JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION is adopting two innovations beginning with the January issue. The type face is changed and the size of THE JOURNAL is enlarged.

The change in the type face is probably of more interest and advantage to the reader. This type, which was originated five years ago, is being used more and more by magazine and book publishers

because of its legibility. Symmetry, absence of light lines in its various letters and its boldness make this type, called Texttype, one of the most easily read. While a size smaller type is being used for the original articles, editorials and news, the legibility of this type and increased space between lines makes reading much easier. The remainder of the material in THE JOURNAL is in the same size type as was formerly used but is also the easily legible Texttype.

THE JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION is one of thirty-three journals published by state medical organizations and affiliated with the Cooperative Medical Advertising Bureau with offices in the Headquarters building of the American Medical Association. All such journals look to the *Journal of the American Medical Association* for guidance and example and to each other for standardization. The trend for the state journals is to conform more nearly in size with the *Journal of the American Medical Association* and with this issue THE JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION adopts a larger sized page.

This standardization should be of advantage in obtaining national advertising, especially of advertisers using inserts in the *Journal of the American Medical Association*. The advertiser will not be put to the extra expense of printing inserts of a smaller size when using our JOURNAL. They will simply print additional inserts of those used in the *Journal of the American Medical Association* and the extra inserts can be used in our JOURNAL with slight trim. The regular size cuts for illustration furnished by the advertiser will also display to better advantage.

It is expected that these changes in THE JOURNAL will prove to the advantage of the reader and make possible obtaining more national advertising.

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#### NEWS NOTES

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Dr. Francis Reder, St. Louis, was a guest of the North Central Illinois Medical Association at Peoria, Illinois, on December 7 and spoke on "Unilateral Exophthalmos."

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Dr. Lloyd R. Jones, St. Louis, Assistant Professor of Bacteriology, St. Louis University School of Medicine, addressed the Trudeau Club of St. Louis on December 2 on the subject, "The Biology of the Tubercle Bacillus."

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The second annual Clinical Conference of the Midwestern Radiologists will be held in Kansas City at the Muehlebach Hotel, February 11 and 12. Dr. Ira H. Lockwood, Kansas City, is chairman of the local committee. There will be no registration fee and the medical profession of the Midwest are invited to attend the meeting.



The first West Coast meeting of the American Academy of Orthopedic Surgeons will be held January 16 to 20, 1938, at the Hotel Biltmore, Los Angeles. Special trains will be run with stop overs at Santa Fe, the Grand Canyon, San Francisco and other points.

Drs. P. T. Bohan, C. B. Francisco, I. S. Brown, E. T. Gibson and Rexford L. Diveley, Kansas City, presented papers at the annual meeting of the Rock Island Railroad Surgeon's Association in Fort Worth, Texas, November 17 and 18. Dr. John Hayden, Kansas City, was presiding officer.

The members of the Kansas City Society of Ophthalmology and Otolaryngology were guests of the Omaha and Council Bluffs societies at Omaha on November 18. Clinics were held at St. Joseph's and University of Nebraska hospitals, Omaha, followed by a dinner and scientific program.

Mr. Edwin Moss Watson, Columbia, an honorary member of the Missouri State Medical Association, died of cerebral hemorrhage at the Boone County Hospital, Columbia, November 30, aged 70 years. Mr. Watson had for many years been editor and publisher of the Columbia *Daily Tribune*. He was the son of the late Dr. and Mrs. B. A. Watson.

The American Board of Obstetrics and Gynecology will hold its next examination (written and review of case histories) on February 5, 1938, for group B candidates who have filed applications in various cities of the United States and Canada. The general oral, clinical and pathological examinations for all candidates will be conducted by the entire board in San Francisco on June 13 and 14, immediately prior to the meeting of the American Medical Association. Applications for admission to the June examination must be on the official application form and filed in the secretary's office before April 1, 1938. For further information and application blanks address Dr. Paul Titus, 1015 Highland Building, Pittsburgh.

The American Public Health Association will hold its 67th annual meeting in Kansas City, October 25 to 28, 1938. Dr. Edwin H. Schorer, Director, Kansas City Health Department, has been appointed chairman of the local committee and will be assisted by a large group of city and state officials and community leaders. Affiliated organizations meeting with the American Public Health Association include the American Association of School Physicians, Association of Women in Public Health, Conference of State Laboratory Directors, Conference of State Sanitary Engineers, American Association of State Registration Executives, Delta Omega and the International Society of Medical Health Officers.

The Hotel and Housing Committee for the San Francisco 1938 Annual Session of the American Medical Association advises that members should write immediately and obtain their hotel reservations if they contemplate attending the Session this June. Recent issues of the *Journal of the American Medical Association* give lists of San Francisco hotels and rates. Requests should be sent to Dr. Frederick C. Warnshuis, 450 Sutter Street, San Francisco, giving names of members of the party, type of accommodations desired, rates, dates of arrival and departure.

Dr. T. S. Lapp, Fulton, of the Tumor Clinic at the Fulton State Hospital, made the following report for the month of November: New patients, 11; visits to clinic, 46; radium treatments, 11; biopsies, 2; radical excision of carcinoma of left face, 1, and excision of nodule of left chest wall, 1. New admissions to the clinic are equalling those of previous months. Throughout the entire year there has been a gradual increase in the number of patients and the number of visits and this year first admissions have almost tripled those of previous years. The new roentgen ray equipment has arrived and will be installed soon. Other equipment for the hospital is arriving and occupancy is planned for January 1 although all apparatus will not be in readiness for several weeks.

The American Board of Internal Medicine will hold its next written examination on Monday, February 14, 1938, in various centers of the United States and Canada. The examination will consist of two sessions of three hours each with the morning session at 9 o'clock and the afternoon session at 2 o'clock. The candidates who are successful in this written examination will be eligible to take the practical examination which will be held the Friday and Saturday prior to the opening of the Annual Session of the American Medical Association in San Francisco. The final date for filing applications for this written examination is January 15, 1938. For further particulars and applications address Dr. Walter L. Bierring, 406 Sixth Avenue, Des Moines, Iowa.

The following members accepted invitations of the Missouri State Committee of the American Society for the Control of Cancer to address lay audiences:

Dr. W. A. Bloom, Fayette, addressed the Woman's Auxiliary of the Linn County Medical Society at Marceline on November 1 and showed the motion picture "Fight Cancer With Knowledge."

Dr. M. H. Shelby, Cape Girardeau, addressed the Women's Council of Cape Girardeau County at Jackson on November 6 on "Pertinent Facts About Cancer."

Dr. John E. Hobbs, St. Louis, spoke before the Oak Grove Home Demonstration Club at Farm-



ington on November 12 on "Prevention and Treatment of Cancer in Women."

Dr. A. Mitchell Gregg, Joplin, addressed the Reciprocity Club of Joplin on November 8 on "What the Individual Can Do About Cancer."

Drs. T. S. Lapp, Fulton; John W. Williams, Jr., Jefferson City, and Frank L. Rector, Evanston, Illinois, spoke at a meeting of the officers of the Women's Field Army in Jefferson City on December 3.

Dr. Ellis Fischel, St. Louis, and Dr. Frank L. Rector, Evanston, Illinois, addressed representatives of St. Louis women's organizations in St. Louis on December 4.

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The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Abbott Laboratories

Ampoules Sodium Cacodylate—Abbott, 0.05 Gm. ( $\frac{3}{4}$  grain) 1 cc.

Ampoules Sodium Cacodylate—Abbott, 0.097 Gm. ( $1\frac{1}{2}$  grains) 1 cc.

Ampoules Sodium Cacodylate—Abbott, 0.2 Gm. (3 grains) 1 cc.

Ampoules Sodium Cacodylate—Abbott, 0.324 Gm. (5 grains) 1 cc.

Ampoules Sodium Cacodylate—Abbott, 0.454 Gm. (7 grains) 1 cc.

Ampoules Sodium Cacodylate—Abbott, 0.975 Gm. (15 grains) 2 cc.

Gilliland Laboratories, Inc.

Gas Gangrene Antitoxin, Concentrated and Refined

Tetanus-Gas Gangrene Antitoxin, Concentrated and Refined

Antimeningococcic Serum, Concentrated and Refined

Rabies Vaccine (Modified Semple Method)

Lederle Laboratories

Aminophyllin—Lederle

Ampuls Solution Aminophyllin—Lederle, 0.24 Gm., 10 cc.

Ampuls Solution Aminophyllin—Lederle, 0.48 Gm., 2 cc.

Tablets Aminophyllin—Lederle, 0.1 Gm. ( $1\frac{1}{2}$  grains)

Paul-Lewis Laboratories, Inc.

Aminoacetic Acid—Paul-Lewis

Rare Chemicals, Inc.

Salysal

Salysal Tablets, 5 grains (0.3 Gm.)

E. R. Squibb & Sons

Tablets Sulfanilamide—Squibb,  $7\frac{1}{2}$  grains

Frederick Stearns & Co.

Sterile Solution Neo-Synephrine Hydrochloride, 1 per cent 15 cc. vials

John Wyeth & Brother, Inc.

Vaginal Suppositories Silver Picrate—Wyeth, 1 grain (infant size)

The following members accepted invitations of the Postgraduate Committee, the McAlester Foundation and the Cancer Committee to deliver addresses at recent meetings of component societies and lay meetings:

Dr. Charles F. Sherwin, St. Louis, addressed high school students and a public meeting at Perryville on "Appendicitis" on November 23 under the auspices of the Perry County Medical Society.

The Clark County Medical Society had as guests at Kahoka on November 23 Drs. W. F. Francka, F. E. Sultzman and H. B. Goodrich, Hannibal, who addressed the Society and a lay audience.

On November 26 the Greene County Medical Society had as guests at Springfield Dr. W. T. Coughlin, St. Louis, who spoke on "Cancer of the Stomach"; Dr. Gray Jones, St. Louis, who discussed "Vesicovaginal Fistula," and Dr. R. O. Muether, St. Louis, who spoke on "Pneumonia."

Drs. G. Wilse Robinson, Donald R. Black and Stanley L. Green, Kansas City, were guests of the South Central Counties Medical Society at Mountain Grove on December 9. Dr. Robinson spoke on "Mental Health"; Dr. Black on "Pneumonia," and Dr. Green on "Agranulocytic Angina."

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## OBITUARY

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### HARRY W. TULL, M.D.

Dr. Harry W. Tull, Carrollton, a graduate of the Missouri Medical College, St. Louis, 1891, died of cerebral hemorrhage on October 1, 1937, aged 69 years.

Dr. Tull had been in active practice in his home community for more than forty-five years. He was the third generation of physicians in his family, his father, the late Dr. Littleton Tull, was one of the pioneer physicians of Carroll County. Dr. Tull had been a member of the Carroll County Medical Society for many years.

He is survived by two sisters.

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### JAMES McBRIDE HUBBARD, M.D.

Dr. J. M. Hubbard, Mountain Grove, a graduate of the Louisville Medical College, Louisville, Kentucky, 1893, died of the infirmities of age on October 25, 1937, aged 84 years.

Dr. Hubbard was born at Houston, Missouri, the son of a physician who had come to Missouri from North Carolina. At the age of 17 Dr. Hubbard entered the Missouri Medical College. He was unable to complete his medical education at that time but continued to study with his father.

After receiving his medical degree he located at what was ten years later to become Mountain Grove and that remained his home until his death.

Dr. Hubbard was loved and respected by all who knew him. He was a loyal member of organized medicine and remained actively engaged in his practice until a few days before his death although his health had been failing for several months. He was elected an honor member of the South Central Counties Medical Society and the Missouri State Medical Association in 1934.

He is survived by one son and two daughters.

## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.

Perry County Medical Society, December 4, 1937.

Ste. Genevieve County Medical Society, December 14, 1937.

ASSOCIATE EDITORS: COUNCILORS OF THE  
TEN COUNCILOR DISTRICTS

#### FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR

##### Buchanan County Medical Society

The Buchanan County Medical Society was called to order at the Missouri Methodist Hospital at 8 p. m., December 1, by the president, Dr. Charles Greenberg, with thirty-five present.

It was moved by Dr. W. R. Moore and seconded by Dr. Paul Forgrave that necessary funds be taken from the treasury to buy a screen for motion pictures and slides. The following committee was appointed to buy the screen: Drs. W. R. Moore and Gregg Thompson.

The following officers were elected: President, Dr. G. T. Bloomer; vice president, Dr. F. X. Hartigan; secretary, Dr. O. Earl Whitsell; treasurer, Dr. J. M. Bell; censor (three years), Dr. C. S. Branson; delegate, 1938 and 1939, Dr. L. P. Forgrave; alternate, 1938 and 1939, Dr. W. T. Stacy; member of auxiliary committee on public policy, Dr. H. E. Peterson; member board of trustees until 1943, Dr. Charles Greenberg.

O. EARL WHITSELL, M.D., Secretary.

##### Grundy-Daviess County Medical Society

The Grundy-Daviess County Medical Society met at the Trenton Trust Company Building, Trenton, December 7, and the following officers were elected: President, Dr. W. A. Fuson, Trenton; vice president, Dr. O. R. Rooks, Trenton; secretary and treasurer, Dr. E. A. Duffy, Trenton; censors, (one year) Dr. O. R. Rooks, Trenton, (two years) Dr. Bertha Sheetz, Trenton, (three years) Dr. R. V. Thompson, Jamesport; delegate, Dr. E. C. Ambrose, Trenton; alternate, Dr. C. H. Cullers, Trenton. The delegate and alternate from Daviess County will be elected at the next meeting.

E. A. DUFFY, M.D., Secretary.

##### Nodaway County Medical Society

The Nodaway County Medical Society met December 3 and the following officers were elected: President, Dr. W. R. Jackson, Maryville; vice president, Dr. C. V. Martin, Maryville; secretary-treasurer, Dr. B. F. Byland, Burlington Junction.

W. R. JACKSON, M.D., Secretary.

#### SECOND COUNCILOR DISTRICT

H. B. GOODRICH, HANNIBAL, COUNCILOR

##### Chariton County Medical Society

The Chariton County Medical Society met November 17 in Rothville at the home of Dr. C. D. Stratton with the Linn County Medical Society as guests. Twenty-six physicians attended. Thirteen of the fourteen members of the Chariton County Medical Society were present.

Drs. A. A. Werner and Ralph L. Cook, St. Louis, were guest speakers sent by the Postgraduate Committee of the State Association. Dr. Werner spoke on "Clinical Application of Pituitary and Ovarian Hormones in Regard to Uterine Function," and Dr. Cook spoke on "Children's Diseases of Infectious and Contagious Types."

The following officers were elected: President, Dr. U. G. Buck, Rothville; vice president, Dr. O. H. Dameron, Keytesville; secretary and treasurer, Dr. G. W. Hawkins, Salisbury; delegate, Dr. J. W. Hardy, Sumner; alternate, Dr. U. G. Buck, Rothville.

G. W. HAWKINS, M.D., Secretary.

##### Marion-Ralls County Medical Society

The Marion-Ralls County Medical Society met November 5 at the Mark Twain Hotel, Hannibal, at 6:30. Following a dinner a short business session was held.

The censors reported favorably on the application of Dr. Harry L. Greene and he was elected to membership by unanimous vote.

The Society voted to invite the Mississippi Valley Medical Society to hold its 1938 annual session in Hannibal.

Dr. H. B. Goodrich, Hannibal, Councilor, reported on the meeting of the State Cancer Committee at St. Louis to discuss the location of the State Cancer Hospital.

Dr. G. O. Broun, St. Louis, gave a lecture on "Encephalitis."

Dr. Peter G. Danis, St. Louis, spoke on "Poliomyelitis," with motion pictures an application of splints.

Both papers were instructive and interesting and were appreciated by all.

There were twenty-one physicians present.

#### Meeting of December 3

The Society met on December 3 at the Levering Hospital at 8 p. m., the president, Dr. C. E. Salyer, presiding.

A communication from the U. S. Bureau of Census was read and discussed and the following committee was appointed to recommend any helpful change in birth and death certificates: Drs. E. M. Lucke and H. B. Norton.

A letter from Dr. Harold Swanberg accepting the invitation to entertain the Mississippi Valley Medical Society for the 1938 annual session was read and dates of September 28, 29 and 30, noted. Drs. H. B. Goodrich, J. W. Hardesty, W. F. Francka, W. J. Smith, B. L. Murphy and George Hornback were appointed a committee on arrangements.

A letter from a group of physicians in San Francisco was read calling attention to some objections as outlined in the "Principles and Proposals" of governmental



participation in matters of prevention and cure of disease and urging the Society to take no favorable action on the proposition without mature judgment. The Society voted to be guided in the matter by recommendations of the House of Delegates of the American Medical Association.

The library committee reported that they favored libraries in both Levering and St. Elizabeth's hospitals. The report was adopted.

Dr. H. B. Goodrich, Hannibal, reported on the Council meeting at Columbia on November 23.

The report of the treasurer was referred to the following auditing committee: Drs. J. W. Hardesty and H. L. Greene.

Officers were elected as follow: President, Dr. C. E. Salyer, Hannibal; vice president, Dr. W. D. Pipkin, Monore City; secretary-treasurer, Dr. B. L. Murphy, Hannibal; board of censors, Drs. H. L. Banks, E. R. Motley and W. F. Francka, Hannibal; delegates, Dr. J. E. Brown, Perry, and Dr. W. F. Francka, Hannibal; alternates, Drs. J. W. Hardesty, Hannibal, and T. A. Roselle, Palmyra.

The Society adjourned to the dining room where they were served oyster stew by the hospital personnel.

H. B. NORTON, M.D., Secretary.

#### Randolph-Monroe County Medical Society

The Randolph-Monroe County Medical Society met at the Public Library in Moberly on November 9.

Dr. P. C. Schnobelen, St. Louis, spoke on "X-Ray Examination in Cancer of the Stomach and Esophagus."

Dr. Charles F. Sherwin, St. Louis, discussed "Surgical Treatment of Cancer of the Stomach and Esophagus."

The guest speakers were sent by the Committee on Cancer of the State Association.

Dr. Leo L. Grzesk was admitted to membership.

The following members and guests were present: Drs. J. F. Flynt and M. C. McMurry, Paris; J. B. Stokes, Excello; F. L. McCormick, C. K. Dutton, M. E. Kaiser, C. C. Smith, P. C. Davis, L. E. Huber, T. S. Fleming, L. L. Grzesk, L. O. Nickell, R. D. Streeter and W. R. Langston, Moberly.

M. E. KAISER, M.D., Secretary.

#### FOURTH COUNCILOR DISTRICT

##### R. B. DENNY, CREVE COEUR, COUNCILOR

##### St. Louis County Medical Society

The St. Louis County Medical Society was called to order at 2:50 p. m., November 10, the vice president, Dr. U. S. Short, St. Louis, presiding.

Dr. R. A. Nussbaum, St. Louis County Hospital, presented an unusual case of renal tuberculosis.

Dr. Julius Jensen, St. Louis, read a paper on "The Practical Value of Electrocardiography."

Dr. Roland Steubner, St. Louis, read a paper on "The Treatment of Ulcers of the Leg."

##### Meeting of November 24

The Society met at 8:35 p. m. on November 24.

Dr. J. H. Armstrong, Kirkwood, presented a case of death from an abdominal hemorrhage from a source which could not be identified at postmortem.

Dr. R. D. Robinson, St. Louis County Hospital, presented a case of fracture of the surgical neck of the humerus. The anatomical conditions of this fracture were discussed by Dr. J. D. Hayward, St. Louis.

Dr. Francis M. Barnes, Jr., St. Louis, read a paper on "Neurosis in Relation to General Practice" which aroused a lively discussion by Drs. H. L. Stein, Andy Hall, J. D. Hayward, Mary A. McLoon, St. Louis; E. R. Brown, University City, and R. A. Walther, Overland.

Dr. J. Roy Compton, St. Louis, reported a case of granulosis celled tumor and gave a general discussion of the condition.

It was decided that the annual banquet should be held on January 5.

##### Meeting of December 8

The Society was called to order at 2:30 p. m.

The Rev. J. H. Schulz, Baitalpur, India, presented an extremely interesting paper followed by two thousand feet of motion pictures on "Life in the Leper Colony in Baitalpur." Although the program was probably the longest which has been presented in the annals of the Society the picture was followed with intense interest after which the speaker received a rising vote of thanks.

Dr. T. J. Kemp, St. Louis, reported on the annual banquet and Dr. R. B. Denny, Creve Coeur, moved that the banquet be held at the Norwood Hills Country Club. Dr. C. P. Dyer, St. Louis, moved that the Society bear the incidental expense and that the committee select a menu.

The following officers were elected: President, Dr. Roy Walther, Overland; vice president, Dr. D. M. Skilling, Jr., Webster Groves; secretary, Dr. John A. Rogers, University City; councilors, Drs. E. O. Breckenridge, Maplewood, and H. J. Stein and U. S. Short, St. Louis; delegates for two years, Drs. E. R. Brown, University City, and J. D. Thurmon, St. Louis; delegates for one year, Drs. John O'Connell, Overland, and Chester A. Poe, Wellston; alternates, Drs. O. W. Koch and C. P. Dyer, St. Louis; O. P. Hampton, University City, and V. F. Townsend, Maplewood.

JULIUS JENSEN, M.D., Secretary.

#### FIFTH COUNCILOR DISTRICT

##### M. PINSON NEAL, COLUMBIA, COUNCILOR

##### Boone County Medical Society

The Boone County Medical Society held its regular monthly dinner and meeting at the Episcopal Student Center on November 2 with fifteen members present. After dinner the meeting was called to order by the president, Dr. W. O. Fischer, Columbia.

The secretary presented applications of Drs. Edward W. Cline, Charles A. Leech, Jr., and Richard L. Crouch, Columbia, which were referred to the board of censors.

The secretary read a letter from Dr. M. Pinson Neal, Columbia, Councilor of the Fifth District, briefly reviewing the attendance at the Fifth Councilor District meeting held in Columbia on October 21. He pointed out that any member in arrears in his dues may be restored to good standing by the payment of his 1937 dues by December 31. He emphasized the importance of electing as Delegate to the Annual Session next May a man who could be trusted and expected to attend and represent the Society on the floor without fail. He further expressed gratitude and his personal thanks to the Boone County Medical Society for its support, interest, energy and enthusiasm in connection with the annual Fifth Councilor District meeting.

Dr. E. P. Heller, Kansas City, spoke on "The Business End of the Practice of Medicine." He discussed in interesting fashion some of the problems of medical economics, discussing in detail the efforts being made in Kansas City to establish a bureau for the clearance of medical debts similar to those now in existence in St. Louis, Washington, D. C., and other cities throughout the country. Considerable discussion followed the paper which was well received by the members present.

##### Meeting of December 7

The annual dinner meeting and election of officers was held in the Candlelight Room of the Harris Cafe



at 6:30 p. m., December 7, with the president, Dr. W. O. Fischer, Columbia, presiding.

Dr. M. Pinson Neal, Columbia, reported for the program committee that the idea carried out this year of having a dinner with each meeting had proved to be quite satisfactory and he urged that the plan be continued.

The board of censors reported favorably upon the applications of Drs. Edward W. Cline, Charles A. Leech, Jr., and Richard L. Crouch, Columbia, and they were elected to membership.

Dr. W. O. Fischer, Columbia, brought up the question of whether or not permission of the Society is necessary for members to give lectures on medical subjects before lay audiences. This evoked considerable discussion by Drs. Neal, C. R. Bruner, A. R. McComas and others. Dr. McComas, particularly, warned the Society against the indiscriminate lecturing to lay audiences, calling attention to the possibility of lay audiences and clubs exploiting the physicians and also the danger to the individual doctor as well as the Society in the matter of identifying organized medicine with groups of questionable character whose motives might possibly be ulterior. He advised that all lay organizations desiring medical speakers should be instructed to present their desires and secure permission from the Society rather than from individuals. Dr. C. F. Sneed, Columbia, moved that all problems concerning member speakers for lay audiences be referred to the committee on lay projects, lay organizations and lay education. The motion carried.

Dr. Neal presented his resignation as Delegate to the Annual Session to take effect at once. Dr. Dudley S. Conley, Columbia, moved that Dr. Neal's resignation be accepted. Dr. Neal stated that his new duties as Councilor of the Fifth District and Chairman of the Council made this step necessary.

The secretary read a letter from Dr. H. E. Allen, Washington, D. C., requesting that his membership, which was suspended honorably and for an indefinite period in February, 1935, because of his desire to pursue postgraduate work in the East, be reinstated and that he be billed for the cost of this reinstatement. The Society reactivated the membership as of January 1, 1938.

Dr. R. H. Simpson, Columbia, expressed the Society's gratitude and appreciation for the work of Dr. M. Pinson Neal as chairman of the program committee throughout the last year calling attention to the better attendance than in previous years and the fine caliber of the programs; programs in keeping with the standards which the Society has always tried to maintain. His statements expressed fully the feelings of the entire group.

The following officers were elected by acclamation: President, Dr. Dan G. Stine, Columbia; vice president, Dr. E. D. Baskett, Columbia; secretary-treasurer (re-elected), Dr. M. E. Cooper, Columbia; member of board of censors (term to expire 1941), Dr. C. R. Bruner, Columbia; member auxiliary committee on public policy, Dr. Dudley A. Robnett, Columbia; delegate to fill the unexpired term of Dr. M. Pinson Neal, Dr. A. R. McComas, Sturgeon.

Following the election of officers an interesting motion picture on "Oxygen Therapy" was presented by a representative of the Linde Air Products Company. The film showed various types of oxygen apparatus and a detailed description of the method of storing, cleaning and keeping available the equipment present in hospitals. The film also demonstrated several methods of analyzing the percentage of oxygen in the circulating atmosphere of the tents and showed the importance of this analysis.

M. E. COOPER, M.D., Secretary.

## SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

### Cass County Medical Society

The Cass County Medical Society met in regular quarterly session at the office of Dr. J. E. Wensley, Harrisonville, at 7:30 p. m., December 9. Dr. L. V. Murray, Pleasant Hill, vice president, presided.

The following officers were elected: President, Dr. L. V. Murray, Pleasant Hill; vice president, Dr. G. W. Griffith, Garden City; secretary-treasurer, Dr. D. S. Long, Harrisonville; censor (three years), Dr. J. S. Triplett, Harrisonville.

Nadyne Anderson, R. N., Columbia, field nurse for the Missouri State Crippled Children's Service, explained her work and asked cooperation of the members. The president appointed Dr. D. S. Long, Harrisonville, as advisory committeeman in this work.

Dr. R. M. Miller, Belton, read resolutions drawn by a committee appointed at a called meeting on November 8 specifying the terms upon which members of the Society will furnish medical care to Cass County clients of the Resettlement Administration. After discussion by Drs. D. S. Long, Harrisonville; R. H. Smith, Rich Hill, and A. J. Campbell, Sedalia, and others, it was decided to delay further discussion and action until a special meeting to be called soon.

Dr. D. S. Long, Harrisonville, read the report of the committee appointed to confer with the county court regarding furnishing better medical care to the indigent sick of the county. After a general discussion the resolution was adopted with instructions that certain changes in the fee schedule be made before submission to the county court.

Dr. J. E. Wensley, Harrisonville, read a paper on "Sulfanilamide: Its Action and Uses," which was freely discussed.

Dr. T. W. Adair, Archie, reported several cases in which he had used sulfanilamide with favorable results.

Dr. A. J. Campbell, Sedalia, Councilor, read an excellent paper on "Organized Medicine: Its Aims and Ideals." The Society greatly appreciated Dr. Campbell's presence, his part in the program and his counsel.

Dr. Campbell cordially invited the members to attend a District Meeting which will be held in Sedalia in the near future.

J. S. TRIPLETT, M.D., Secretary.

### Pettis County Medical Society

The Pettis County Medical Society met in Sedalia on December 6 and the following officers were reelected: President, Dr. Gordon Stauffacher, Sedalia; vice president, Dr. E. H. Schaefer, Sedalia; treasurer, Dr. A. E. Monroe, Sedalia; secretary, Dr. John B. Carlisle, Sedalia; censors, Drs. Cord Bohling, F. R. Morley and M. P. Shy, Sedalia. Dr. A. J. Campbell, Sedalia, resigned as delegate and was replaced by Dr. W. A. Beckemeyer, Sedalia. Dr. F. B. Long, Sedalia, was elected alternate.

JOHN B. CARLISLE, M.D., Secretary.

### Saline County Medical Society

The Saline County Medical Society met on December 8 as guests of the Woman's Auxiliary for dinner.

Following the dinner the Society held a short business session at which the following officers were elected: President, Dr. E. A. Belden, Marshall; vice president, Dr. S. T. Mead, Slater; secretary and treasurer, Dr. John R. Lawrence; censor (three years), Dr. Coburn Ellis, Malta Bend, (two years) Dr. R. C. Haynes, Mar-

shall, (one year) Dr. L. S. James, Blackburn; delegate, Dr. L. S. James, Blackburn, alternate, Dr. S. P. Simmons, Marshall.

Following the meeting the Auxiliary entertained the Society with bridge.

JOHN R. LAWRENCE, M.D., Secretary.

## SEVENTH COUNCILOR DISTRICT

### E. P. HELLER, KANSAS CITY, COUNCILOR

The Jackson County Medical Society held its annual election of officers on December 7 and the following officers were chosen: President-Elect, Dr. Ferdinand C. Helwig; secretary, Dr. James Harvey Jennett; treasurer (reelected), Dr. Ambrose Eastin Eubank; executive council (new members), Drs. John Aull and Dar D. Stofer; board of censors (new member), Dr. Nelse F. Ockerblad; Delegates to Missouri State Medical Association, Drs. Morris B. Simpson, Ira H. Lockwood, Rexford L. Diveley, George H. Thiele, Andrew W. McAlester II, Damon O. Walthall; Alternate Delegates to Missouri State Medical Association, Drs. John R. Green, Independence, Ralph R. Coffey, E. Kip Robinson, P. C. Quistgard, John McLeod, Paul F. Hunt.

Dr. Ira H. Lockwood will succeed Dr. Morris B. Simpson as President. As an illustration of what we may expect in the way of progressive action by the Jackson County Medical Society in the coming year we take the liberty of quoting from Dr. Lockwood's presidential address before the opening session of the Kansas City Southwest Clinical Society on October 4, 1937.

After welcoming the guests and briefly outlining the program of the four day meeting Dr. Lockwood spoke on the subject, "You Can't Do As You Please." Following are some of his important pronouncements:

"... They (Delegates to the American Medical Association Atlantic City Session) have not recovered from what they heard and whether they ever will recover depends upon the man in the private practice of medicine.

"Senator Lewis stated: 'We the Government know nothing of the patient, don't recognize his existence; we recognize an instrument called a citizen who is essential to the welfare of government.'

"Some of the self-styled leaders in medicine have called this statement ridiculous and absurd, but nevertheless we are facing a new social order where you can't do as you please; we cannot remain as individuals, we must conform to rules.

"As far as I can see, we might consider that speech the beginning of an era that I hear called, 'the lack of medical leadership.' And what is this going to mean to you and me in the private practice of medicine? I think we may find an answer by considering the changes in medical practice in the light of past changes in industry.

"It appears that we are face to face with the organized promotion of medicine as the handicraftsman was at the dawn of the changes in industry when science introduced machine power; we have seen the increase of motor traffic, development of machinery for factory use, continued installation of devices in the homes for the reduction of house work; because there was not enough industrial leadership among the handicraftsmen the evolution of industry got out of hand, many of the rarest values evolved through the centuries were lost, and a vast high-powered industrial machine subjected the handicraftsmen to a ruinous competition they could not meet. In like manner, unless adequate medical leadership is brought about by the average man in the profession, we may lose many of the rarest values evolved by the older practitioners in the art of the

practice of medicine, and it may happen that a vast, high-powered medical machine, under the sponsorship of industries, insurance companies and government, will enter the field and subject us to a ruinous competition we cannot meet."

Time and time again the point has been stressed that action by the leaders of the American Medical Association has to come from the grass-roots via the state and American Medical Association delegations. The national set-up is such that if intelligent, forward-looking leaders do not assume their full responsibilities in the local units of medical organizations—the roots—the leaves will wilt and there will be no flower. Jackson County looks forward to an important year of united effort behind an intelligent leader, a man who can and will pursue the policy of active effort toward progress and coordination, so eminently brought to a peak by our retiring president, Dr. Morris B. Simpson.

## NINTH COUNCILOR DISTRICT

### W. H. BREUER, ST. JAMES, COUNCILOR

#### South Central Counties Medical Society

The South Central Counties Medical Society met at the Elliott Hotel in Mountain Grove for dinner at noon on December 9, 1937. The following members and visitors were present: Drs. R. A. Ryan, H. G. Frame, R. W. Denney, A. C. Ames, Mountain Grove; Deborah Doan, Bakersfield; E. G. Beers, Seymour; W. F. Herron, L. M. Dillman, Houston; G. Wilse Robinson, Sr., Donald R. Black, S. L. Green, Kansas City.

After dinner Dr. Robinson read a paper on "Mental Health" and showed some motion pictures illustrating the subject. The presentation was much appreciated.

Dr. Black spoke on "Pneumonia" stressing especially the different types of infection and the importance of distinguishing them and fitting the treatment to the type.

Dr. Green talked on "Agranulocytic Angina or Septic Sore Throat," explaining how it is often diagnosed as diphtheria and that it is fully as serious and not so amenable to treatment as is diphtheria.

A representative of the Linde Air Products Company, Tulsa, Oklahoma, showed a motion picture on "Oxygen Therapy" which was interesting and instructive.

Officers were not elected because of the small attendance.

The meeting adjourned to meet early in February at Houston.

A. C. AMES, M.D., Secretary.

## TENTH COUNCILOR DISTRICT

### A. H. MARSHALL, CHARLESTON, COUNCILOR

#### Butler County Medical Society

The Butler County Medical Society met December 2 and the following officers were elected: President, Dr. B. J. McCauley, Poplar Bluff; vice president, Dr. C. Lillbourn Qualls, Poplar Bluff; secretary-treasurer, Dr. J. Lester Harwell, Poplar Bluff.

J. LESTER HARWELL, M.D., Secretary.

#### Ste. Genevieve County Medical Society

The Ste. Genevieve County Medical Society held its annual meeting on December 8 with the president, Dr. J. A. Wilkens, St. Mary's, in the chair.

The president read a letter accompanied by questionnaires from Halbert L. Dunn, M.D., Chief Statis-



tician for Vital Statistics, Washington, D. C., concerning revision of birth, death and stillbirth certificates. After discussion the secretary was instructed to fill out the questionnaires and return them.

The treasurer's report was read and approved.

The following officers were elected; President, Dr. J. A. Wilkens, St. Mary's (reelected); vice president, Dr. G. M. Rutledge, Ste. Genevieve; secretary-treasurer, Dr. R. W. Lanning, Ste. Genevieve (reelected); board of censors, Drs. C. J. Clapsaddle and R. C. Lanning, Ste. Genevieve.

R. W. LANNING, M.D., Secretary.

## WOMAN'S AUXILIARY

Mrs. A. B. McGlothlan, St. Joseph, past State and National Auxiliary President and a member of the State Social Security Commission, is in Washington attending a meeting of the National Social Welfare Council.

Mrs. Charles H. Werner, St. Joseph, and Mrs. Herbert L. Mantz, Kansas City, attended the National Board meeting November 19 in Chicago. There was an attendance of thirty-four including fifteen state presidents. The National President presided. The National President has visited the following state auxiliaries: Montana, Minnesota, Idaho, Utah, Colorado, Nebraska, Iowa, Indiana, Kentucky, Michigan, Pennsylvania and West Virginia. She attended the Southern Medical Association meeting in New Orleans. It was decided at the board meeting to ask all auxiliary members to subscribe to the *National News Letter* at \$1 a year.

Attractive yearbooks have been received from the Saline, Cape Girardeau, Greene and St. Louis City auxiliaries.

Mrs. T. W. Adair, Archie, revisions chairman of the State Auxiliary, was seriously injured December 12 at a basketball tournament in that city when a balcony collapsed. She was taken to a Kansas City hospital.

The Cass County Auxiliary had a fine public relations meeting on December 2 at Harrisonville with Dr. Dudley S. Conley, Columbia, and Dr. John W. Williams, of the State Board of Health, as speakers. There was a good attendance.

## MISCELLANY

### RESOLUTIONS ADOPTED BY THE COUNCIL

The following resolutions were adopted by the Council at its meeting in Columbia on November 23, 1937:

A Resolution concerning the Control and Supervision by the Organized Medical Profession of Social-Medical-Economic Affairs, and their isolation during the period of probation.

WHEREAS, It has long been the policy and practice of the American Medical Association to guide its course in response to the expressed desires of the component units of the profession, and since the American Medical Association is so constituted as to be without original power to act in matters of policy, and

WHEREAS, American medicine is now going through a period of self-study and adjustment to various social and economic currents and trends common to all other American institutions, and since our official national organization, the American Medical Association, stands in need of renewed support and a reaffirmation of our belief in its policy as applied to current problems, and

WHEREAS, It is incumbent upon the local units to voice their sentiments through official channels whenever issues and events demand united action to preserve a status for our profession in which the public good and

the welfare of the sick and afflicted of the nation shall be properly safeguarded, as against the selfish and commercial instincts of individuals within and without the ranks of medical organization, therefore be it

*Resolved*, That the Council of the Missouri State Medical Association go on record as favoring a more positive attitude by the American Medical Association toward social-economic experiments with the following provisos:

1. That attempts to change the methods of providing medical and hospital care of the medically indigent sick and afflicted of our nation be conducted under the watchful eye of the American Medical Association through duly assigned representatives and through officers of local units of the organized profession;

2. That experimental work in medical economics be permitted by and with the approval of the American Medical Association and the state associations in accordance with the principles previously adopted by the House of Delegates of the American Medical Association, provided the experiments be confined to units not larger than a single state, with full and complete recording of all financial, actuarial, morbidity and other statistical data, which shall be subject to the scrutiny of assigned representatives and the Bureau of Medical Economics of the American Medical Association;

3. That an accounting of progress and results of these various experiments under modern American conditions be an obligation to be met annually in the form of a report to the Bureau of Medical Economics, and through it to the House of Delegates and officers of the American Medical Association at the annual convention;

4. That, in keeping with the broad analytical view of social-economic conditions which should be as much a part of our attitude as citizens as is an open mind and scientific investigation a part of our attitude and policy as physicians, we should judge the merits of the various state and local programs solely from the standpoint of the greatest good to the particular community affected and to the nation as a whole;

5. That all publicity possible be given to favorable and unfavorable programs in the *Journal of the American Medical Association* to the end that prejudices may be avoided and a just decision reached, in order that the profession may work for the common good in harmony born of reason;

6. That approval of the House of Delegates of each state association shall be required at the end of each year of operation in order for the local unit to remain in good standing and in order that its endeavors to work out its problems may be properly controlled, finally be it further

*Resolved*, That a copy of this resolution be submitted to the officers of the American Medical Association, and published in the next issue of the Missouri State Medical Association JOURNAL as the opinion of this Council.

## CORRESPONDENCE

### ROBERTSON WARD APPARATUS

St. Louis, November 23, 1937

To the Editor:

In our article "A Simple Continuous Suction Device With Some New Indications and Uses" which appeared in the November issue of THE JOURNAL we failed to mention and give due credit to Dr. Robertson Ward for the original apparatus described by him in the *American Journal of Surgery* in 1930 and to Dr. Willard Bartlett, Jr., for his modification of the apparatus described in the *American Journal of Surgery* in March, 1934. We are sorry that this inadvertency occurred.

MAX GOLDENBERG, M.D.  
I. C. MIDDLEMAN, M.D.



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### ACCURATE DIFFERENTIAL SECTION FOR THE TREATMENT OF TRIGEMINAL NEURALGIA

ROLAND M. KLEMME, M.D.

ST. LOUIS

Operative treatment of major trigeminal neuralgia has been generally accepted for many years. The treatment consists essentially in cutting the sensory fibers of the fifth cranial nerve between the Gasserian ganglion and the central nervous system. Since the introduction of the procedure by Frazier in 1901 the operation has been variously modified and it is the modification of the original procedure that I wish to discuss.

Trigeminal neuralgia manifests itself by lightning-like attacks of excruciating pain in the distribution of one or all branches of the fifth cranial nerve. This nerve is divided into three branches, the ophthalmic, the maxillary and the mandibular. The procedure that I will discuss deals with the preservation in its entirety of the ophthalmic branch and sections of the fibers leading to the maxillary and mandibular branches. That this can accurately be carried out is proved by review of over a hundred patients on whom this has been done. The technic for the accurate differential section of the posterior root for the treatment of trigeminal neuralgia, that is the preservation of all the fibers leading to the ophthalmic branch, the preservation of the motor root and the severance of all the fibers leading to the maxillary and mandibular branches, was introduced by me in 1934.

The etiological factor is not known. The disease is generally seen after the fifth decade of life and by far the greater majority of these cases occurs between the ages of 50 and 75. In my series the youngest patient was 8 years old and the oldest 90.

This condition must be differentiated from migraine, accessory sinus disease, particularly infections of the antra, jumping toothache, dental caries, neoplasms of the oral cavity, spheno-palatine neuralgia, glossopharyngeal neuralgia, mandibular joint neuralgia and infections about the face and mouth.

Trigeminal neuralgia, curiously enough, in my series occurs more frequently in women than in men and more frequently on the right side than on the left side.

A short review of the history of the modifications of the treatment of trigeminal neuralgia can be easily obtained.<sup>1</sup>

Because of the frequency of interstitial keratitis and the not infrequent loss of the eyes on the side of the operation, accurate differential sections were introduced in 1934. The procedure is carried out by using the usual subtemporal approach; the middle meningeal artery is ligated or coagulated, the dura propria is dissected free from the ganglion and the maxillary as well and the mandibular branches are exposed as they leave the ganglion. The dura-arachnoid over the ganglion is then incised at the junction of the maxillary and ophthalmic divisions; this incision is then extended posteriorly across the ganglion over the posterior root. The fibers then flood out into the field. At this point, a fine nerve spatula is inserted between the bundles of fibers leading to the ophthalmic branch and maxillary branch, the spatula being carried back gently through the ganglion into the posterior root. With the spatula in place, a hook is inserted around the fibers leading to the maxillary and mandibular branches and these fibers are then cut with a knife or scissors.

The end result is the preservation of all the ophthalmic fibers, precluding any trouble with the eye, and an anesthesia in the distribution of the maxillary and mandibular branches.

Primary ophthalmic branch trigeminal neuralgia of course necessitates a complete differential section of the nerve; accurate differential section is applicable to patients who have the primary pain in the maxillary or mandibular divisions.

In my series over 60 per cent of the patients complaining of trigeminal neuralgia had an associated hypertension. This is no contraindication for operative interference. The risk of the operation is practically negligible being less than 1 per cent.

The end result in reviewing the records of patients on whom this procedure had been done proves conclusively that it is possible to cut all the

Read at the 80th Annual Meeting of the Missouri State Medical Association, Cape Girardeau, May 10 12, 1937.

1. South. M. J. 28:1086-1091 (December) 1935.

fibers that supply maxillary and mandibular divisions of the fifth nerve and yet leave all the ophthalmic fibers intact.

901 Beaumont Building.

## THE TREATMENT OF STAPHYLOCOCCIC SEPTICEMIA

WITH A SPECIFIC ANTITOXIN

HUBERT M. PARKER, M.D.

KANSAS CITY, MO.

Staphylococcal septicemias belong to that group of severe infections in which the organism produces an exotoxin. General knowledge of the exotoxins of staphylococci are of comparatively recent date. Burnet,<sup>1</sup> Dolman,<sup>2</sup> Parish,<sup>3</sup> Holman,<sup>4</sup> Ramon,<sup>5</sup> Stookey,<sup>6</sup> Scarpellino<sup>7</sup> and others have clarified the situation with their studies of the staphylococcus antitoxin, toxoid and exotoxin. Bacteriological knowledge of an exotoxin dates from the work of Van de Velde<sup>8</sup> in 1894. Renewed interest in this subject was stimulated by the Bundaberg disaster and its investigation by Burnet<sup>1</sup> and others. The consensus of opinion today is to the effect that virulent infections result in most instances from staphylococci that are prolific toxin makers.

This toxin possesses dermonecrotic, leukocidal, hemolytic, lethal and thrombophlebitic properties. These features are conspicuous in most severe staphylococcal infections. In vivo experiments demonstrate complete neutralization of this toxin by an efficient antitoxin. We can therefore very logically expect material benefit in the treatment of such infections from staphylococcus antitoxin.

The treatment of staphylococcus septicemia consists of general supportive measures, transfusions at frequent intervals and the surgical drainage of free pus. These measures are inadequate in the majority of such cases. McNeal,<sup>9</sup> et al., reports a mortality of 75 per cent in 100 cases, using these measures and bacteriophage.

Specific treatment of such septicemias with staphylococcus antitoxin is logical and recent reports in the literature are encouraging. Four cases are presented.

### REPORT OF CASES

Case 1. (Courtesy Dr. Pat Nunn.) H., a white man, aged 28, entered the hospital June 28, 1935, complaining of pain in the left chest, chilly sensations, nonproductive cough, loss of weight and weakness. Patient stated that his illness began with an abscessed tooth four weeks before. Extraction of the tooth was followed by a secondary abscess of the jaw, edema of the side of the face, edema about the eye, purulent discharge from the eye and after one week a sudden pain in the left chest. The patient immediately complained of a nonproductive cough. The clinical course was characterized by a continuation of the cough, chest pain, chilly sensations, sweats and a progressive loss of weight and strength.

Staphylococcus antitoxin courtesy Lederle Laboratories, Inc.

On admission patient was acutely ill with a temperature of 104, pulse 140, respiration 40. Head: There was no evidence of recent pathology of tooth socket, jaw, or face as described. Chest: Expansion poor, resonance diminished in left base, moisture present in both bases, no areas of consolidation described. Abdomen: Liver down three fingers and tender. Spleen not palpable. Extremities: No petechiae or other evidence of pathology. Skin moist, profuse sweating, no petechiae.

Laboratory: White blood count 21,150 with 86 per cent polys, red blood count 4,200,000 with 77 per cent hemoglobin.

Urine: Albumin 4 plus, pus cells 2 plus, blood 1 plus, many granular casts, with blood and pus cells adherent.

Roentgen ray revealed an essentially congestive reaction in the lungs with no evidence of localized pathology.

Blood cultures on four successive days revealed staphylococcus aureus. An autogenous vaccine was made and administered in increasing doses at four day intervals using the multiple intracutaneous method.

Clinical course: The patient grew progressively worse; the temperature was septic in type; the hemoglobin dropped to 60 per cent and embolic phenomena were visualized by roentgen ray in the right lung field one week after admission. At this time a thrombosis occurred in the left subclavian vein. Treatment consisted of autogenous vaccine, eight transfusions at two to four day intervals, and general supportive measures.

On July 20, 1935, the patient received 40 cc. of staphylococcus antitoxin and two days later an additional 40 cc. were administered. Improvement was observed from this time and the patient left the hospital August 20, 1935, very much improved. Subsequently, the thrombosis reappeared in the left arm and an additional 40 cc. of staphylococcus antitoxin was administered. The patient continued to improve slowly and is alive and in fair health at the present time.

Case 2. (Courtesy Dr. J. E. Castles.) S., a white woman, aged 46, was admitted to the hospital December 9, 1936, complaining of a carbuncle on the back of her neck of sixteen days' duration, drowsiness for two days, loss of weight for one year, excessive thirst for some months.

Examination: Patient acutely ill with temperature of 103, pulse 120, respiration 30, and a carbuncle nearly eight inches in diameter on the back and right side of her neck. Patient was drowsy and sluggish, acetone odor present. General physical examination otherwise negative.

Laboratory: White blood cells 29,000, 88 per cent polymorphonuclears, red blood cells 4,770,000, 82 per cent hemoglobin.

Urine: Albumin 1 plus, sugar 4 plus, acetone 4 plus. Few red blood cells and a few granular casts present.

Blood sugar 312. CO<sub>2</sub> combining power 17.8.

A diagnosis of impending diabetic coma was made and diabetic management instituted. Insulin requirement was 90 units daily with a diet of 2200 calories and a glucose value of 175. The carbuncle was treated conservatively with roentgen ray therapy. Approximately one week after admission the patient had a chill and the following day an erythematous, indurated spot appeared on the dorsum of the left hand. Two days later a similar spot appeared on the left leg. The carbuncle was then excised radically. A total of fourteen metastatic abscesses were incised and drained subsequently.

In spite of what appeared to be adequate drainage and efficient diabetic management, the patient became more septic, weaker and progressively worse in every way. Blood cultures were repeatedly negative.

A program of frequent small transfusions and staphylococcus antitoxin was then adopted with immediate clinical improvement. A total of six transfusions and



160,000 units of antitoxin were used. The patient improved steadily and was discharged from the hospital March 10, 1937, with all metastatic abscesses healed, the carbuncle nearly healed, and taking 45 units of insulin daily.

Case 3. (Courtesy Dr. R. S. St. Clair.) T., white man, aged 41, entered the hospital January 28, 1937, complaining of pain in the left hip, left shoulder, cough, chilly sensations, fever, night sweats, weakness, anorexia and loss of weight. Patient's work was in a poultry house where abrasions of the fingers were frequent. He stated that three weeks before admission he experienced a sudden pain in the left shoulder; two days later a similar pain appeared in the left hip and thigh. He noted that he was feverish with hot and cold sensations. Two days later he began to cough purulent material and blood. Condition became rapidly worse with all symptoms progressing until admission to the hospital.

Examination: Patient was acutely ill with temperature of 103, pulse 120, respiration 34. Head: Essentially negative. Chest: Moisture throughout the entire chest, heart pounding. No areas of consolidation. Abdomen: Liver down two fingers, muscle spasm in left lower abdomen. Spleen palpable. Extremities: Swelling involving left hip and left thigh. Skin: Perspiring freely, no petechiae, sudamina present.

Laboratory: White blood count 22,500 with 90 per cent polymorphonuclears, red blood count 4,190,000 with 78 per cent hemoglobin.

Urine: Albumin 3 plus, red blood cells 1 plus.

Blood cultures repeatedly positive for staphylococcus aureus.

Treatment consisted of general supportive measures, three transfusions and 100,000 units of staphylococcus antitoxin.

Clinical course was stormy. The swelling of the left leg diminished, the chest symptoms became more pronounced, the sudamina became cloudy with staphylococcus pus and the patient expired on February 11, 1937. The essential findings at postmortem were a thrombophlebitis of the left iliac vein and its branches, and myriads of small septic infarcts in the lungs.

Case 4. (Courtesy Dr. Frank S. Hogue.) M. W., girl, aged 9, was admitted to the hospital August 13, 1936, complaining of pain and tenderness of the right knee, fever, prostration, extreme exhaustion. Four days before coming to the hospital she fell on the cinders and injured the right knee. Went to bed because of pain in the knee and the following day felt good otherwise. The day before admission developed a high fever and pain in the leg became more severe.

Examination: Patient appeared to be in a great deal of discomfort and extremely toxic. Temperature was 103. She was lying on the table, the right thigh flexed and said the pain was on the under side of the knee. Knee was extremely tender to pressure but no great amount of swelling.

Report of August 13, 1936: Negative of right knee made in two projections shows a normal relation of the bony structure with no evidence of a bone destructive lesion. On August 14 the temperature went to 105 and patient appeared to be extremely toxic. On August 15 blood culture was reported positive for staphylococcus. She had become drowsy, did not respond to questions and was quite irrational. Ten thousand units of antitoxin were given August 15 and repeated on August 16. On August 17 temperature was down to 102 and patient looked somewhat better. August 19 patient was given 400 cc. of blood and 10,000 units of antitoxin. August 18 another roentgen ray picture was made. A definite osteomyelitic type of involvement limited in extent in the lower diaphysis of the right femur, the involvement limited to the lateral margin in the epiphyseal zone. On August 19 incision and drainage of the right knee, medium amount

of bloody purulent drainage. No suturing; vaseline pack on incision. On August 16 a cloudiness appeared in the right eye, obviously a metastasis to this organ. Patient had blood transfusions on August 23 and August 27. Temperature normal in a manner which we usually see following an operation of this kind.

Further roentgen ray reports: October 12, 1936, entire lower half of right femur grossly involved with a patchy destruction present with rather gross involucrum formation. No complete sequestrae, either large or small. There seems to be an invasion of the external condyle of the femur. November 4, 1936, much patchy erosion and softening persisting in the lower third of the right femoral shaft but no definite sequestration. Involucrum formation quite extensive, no invasion of the lower epiphysis or knee joint, neither does there appear to be any new areas of involvement in the middle and upper third of the shaft.

As a summary of this case, we can say that the child at the time of this writing appears to have had an excellent result, except for the loss of sight of the right eye and scar at the operation site. She has been fever free for the last two months and must be considered a fortunate outcome for this serious type of disease.

#### COMMENT

In reviewing the cases presented certain salient facts deserve especial mention. The treatment of staphylococcus septicemia is far from satisfactory. General supportive measures, transfusions at frequent intervals and the drainage of free pus wherever found still remain the foundation of all successful therapy in these infections. In each of these four cases such measures were instituted and in each instance the clinical course justified the conclusion that the early dissolution of the patient was only a matter of time. Staphylococcus antitoxin was then added to the program with brilliant results in three of the four cases. The life-saving property of staphylococcus antitoxin is dramatically portrayed in this brief series of staphylococcus septicemias.

Case 1 illustrates many of the characteristic properties of staphylococcus infections. A periapical abscess was followed by a secondary abscess in the soft tissue of the jaw. A thrombophlebitis of the facial vein resulted in edema of the face and periorcular structures. With the dissolution of the thrombophlebitis the edema of the face disappeared and several pulmonary infarcts occurred. This was followed by a period of active septicemia. The left subclavian vein became thrombosed. Blood cultures were persistently positive until after the use of staphylococcus antitoxin. At this time the first evidence of improvement was noted.

Case 2 illustrates the well known relationship between diabetes and staphylococcus infections. Blood cultures were consistently negative. However, the fact of a septicemia can hardly be questioned in the presence of fourteen metastatic abscesses over a period of many weeks. General supportive measures, adequate diabetic management, wide excision of the carbuncle and the drainage of all evident metastatic abscesses were not successful and the patient failed progressively until staphylococcus antitoxin was administered.



An immediate clinical improvement was noted and the patient eventually recovered.

Case 3 presents the frequently observed feature of thrombophlebitis in staphylococcus infections. The origin of this infection was not evident. The patient's work was of such a nature that his hands were frequently scratched and while he did not recall an infection immediately prior to his shoulder pain it probably did occur and resulted in a thrombophlebitis. The dissolution of such infected thrombi no doubt furnished the source of his septicemia. All evidence of shoulder pathology had disappeared before admission to the hospital. A thrombophlebitis was present in the left iliac vein and its branches at the time of admission to the hospital. The dissolution of this thrombus furnished emboli for the thousands of very small septic infarcts of the lungs. Staphylococcus antitoxin failed to save life in this instance. From the post-mortem findings this could be readily understood.

Case 4 is a picture too well known to require further comment. Approximately 25 per cent of septic osteomyelitis patients die in the acute stage with a staphylococcus septicemia. This patient seemed to be one so destined in the judgment of her physicians. Dramatic improvement followed the use of antitoxin at a time when the usual therapeutic procedures seemed inadequate.

The cardinal features of severe staphylococcus infections are well portrayed in these cases. A rapidly progressive anemia requiring frequent transfusions, the phenomenon of venous thrombosis, the ultimate dissolution of the thrombus with septicemia, tissue invasion, toxemia, pulmonary metastasis, etc., are readily explained in terms of a pyogenic organism with an exotoxin which is hemolytic, dermonecrotic, thrombophlebitic and, in sufficient dosage, lethal. The thrombophlebitis must be regarded as an essentially protective mechanism on the part of the host.

#### CONCLUSIONS

Specific treatment of staphylococcus septicemia with antitoxin is frequently a life saving measure when general supportive measures are inadequate.

736 Argyle Building.

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## CORONARY THROMBOSIS IN YOUNG ADULTS

REPORT OF A CASE IN A MAN AGED 30

MAX S. FRANKLIN, M.D.

ST. LOUIS

There is a rather distinct tendency today to regard coronary thrombosis as increasing. Probably it is just better recognized. But while coronary thrombosis is no longer considered rare there are relatively few cases reported occurring in young adults. Fernando<sup>1</sup> in 1935 reported a case occurring in a youth 24 years of age. Durant<sup>2</sup> recently reported several cases, remarking "that coronary thrombosis in young adults, although generally considered to be a rare condition, may occur with surprising frequency." Smith and Bartel<sup>3</sup> reported two cases in males aged 35 and 36 in which diagnosis was not made until after death, principally because of the youth of the patients. White<sup>4</sup> has reported a series of cases, fourteen cases under the age of 40, four of these being under 30. Rathe<sup>5</sup> reported a case occurring in a young woman aged 32. Mullens<sup>6</sup> published a series of cases, although a number of his cases had luetic aortitis and should not be included in this discussion. Levy<sup>7</sup> wrote about eight cases under 50, two of them being 37 years of age. Levine<sup>8</sup> in his treatise on coronary thrombosis discussed three cases under 40 years of age.

Thus, while it is clearly established that coronary thrombosis does occur in young adults, the question naturally arises just how often it occurs and whether many cases are not missed. According to Levy<sup>7</sup> usually only the more severe and typical cases are recognized and described while mild cases with prompt recovery may be often missed as to diagnosis.

The chief difficulties in recognizing coronary artery disease (excluding luetic cases) in the young adult are the age and the atypical forms. It has always been clearly understood that coronary thrombosis was a disease of older people. The average age in Levine's series<sup>8</sup> was 57.8 years. White<sup>9</sup> recently reported the case of a man who lived twenty-five years after his first attack of coronary thrombosis, although his first attack was not recognized as such at the time but was called acute indigestion. It is not too much to presume that

From the Cardiac Clinics of the St. Louis City Hospital and the Jewish Hospital of St. Louis.

Read before the Junior Section of the St. Louis Medical Society, May 27, 1937.

other such cases have occurred and are occurring.

The symptoms of coronary thrombosis may vary tremendously, from those with marked symptoms of pain and shock to practically no symptomatology. Herrick<sup>10</sup> in 1931 wrote, "One often hesitates on the basis of slight active and residual manifestations to diagnose a condition traditionally and in reality so formidable. We must, however, admit into the cadre of the acute and subacute cases, many milder and atypical types in which supposedly cardinal symptoms may be lacking . . . Painless acute obstruction does occur." Yet, in 1935, he<sup>11</sup> wrote that "there is a tendency to regard too readily any pain in the front of the chest as coronary." This undoubtedly holds true in cases involving individuals over 50 but the opposite viewpoint of the medical profession is probably more prevalent in regard to younger patients.

Lemann<sup>12</sup> in citing three cases showed ample evidence that coronary thrombosis may occur without pain. Davis<sup>13</sup> reports a number of cases proved at autopsy in which the patients did not complain of pain but instead had an abrupt onset of dyspnea and shock.

Positive diagnosis may often be established by electrocardiograms. More routine use of the electrocardiograph may be the means of picking up more cases and sometimes may prove the only basis of diagnosis.

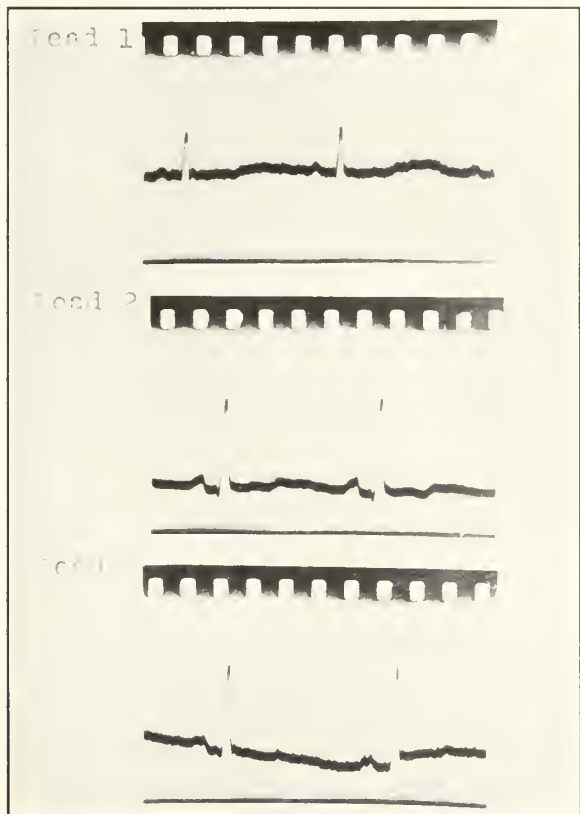


Fig. 1. Note the flatness and tendency to inversion of  $T_1$ , invert to diphasic  $T_2$ , and flat to upright  $T_3$ .

#### REPORT OF A CASE

A white male, aged 30, of Irish ancestry, was first seen by me on March 1, 1937, at the St. Louis City Hospital Dispensary in the cardiac clinic. He stated that on January 8, 1937, he had had an abrupt onset of a queer pressing pain, occurring during the night, gradually becoming more severe and lasting without relief for two days. Although the pain was quite severe he never felt ill enough to stay in bed. Since that time he had been having frequent attacks of a less painful nature, lasting only a few minutes. He had gone to two doctors who diagnosed his condition respectively as a "cold in the chest" and as a "swollen gland." These attacks occurred chiefly at night and were not increased by work. There was no dyspnea.

**Past History:** Entirely negative except for a lifelong affliction of a generalized scaling of the skin over his entire body during winter. His brother was similarly afflicted.

**Habits:** He confessed to drinking a great deal of liquor, especially beer. He smoked from twenty to forty cigarettes daily.

**Family History:** Father is living and well. Mother died at the age of 54 of high blood pressure. He does not know the causes of deaths of grandparents, uncles or aunts. The patient has never married due to the condition of his skin.

**Physical Examination:** The patient is a well developed young man 30 years of age who did not appear ill but looked quite worried. There was a marked scaling of the skin over his entire body, excepting the face, hands and feet—probably ichthyosis. Except for the heart, physical examination was entirely negative. The heart was not enlarged to percussion nor palpation. No thrills were felt. Heart sounds were of good quality and regular rhythm. The rate was 80 per minute. A soft systolic murmur could be heard all over the precordium and best at the apex. The second sounds at the aortic and pulmonary regions were equal and very slightly accentuated. Blood pressure was 130 systolic and 80 diastolic. Diagnosis was necessarily

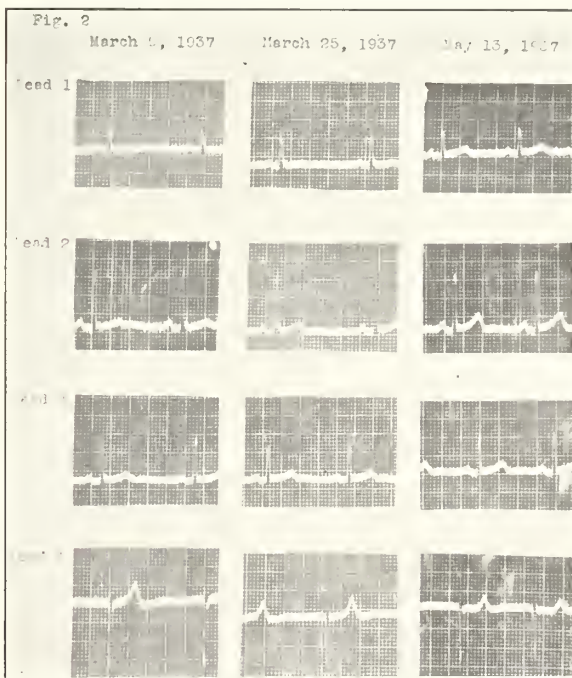


Fig. 2. Note the gradual change in  $T_1$  as well as less appreciable changes in  $T_2$  and  $T_3$  and the persistent upright  $T_4$ . Lead 4 is the apex lead.



deferred and a routine Kahn, seven-foot plate, electrocardiogram, blood counts and urinalysis were ordered.

The electrocardiogram was returned as shown in figure 1. The roentgen ray was negative as were the Kahn, blood counts and urinc. The diagnosis of coronary thrombosis was made on evidence of the electrocardiogram. The patient was placed on aminophyllin and the use of alcoholic beverages and tobacco were discontinued. As the symptoms started two months before, the patient was not put to bed and was allowed to continue work which is of an easy, outdoor type. This was done also to prevent him from becoming a cardiac neurotic.

Each successive visit found him more improved and at the present time he is in apparently good health, complaining only of an occasional sensation of pressure about the precordium, usually at night while lying in bed. Examination remains as before except that the systolic murmur previously found has increased somewhat in intensity. His blood pressure has alternated between 150/90 and 130/80. His electrocardiograms have undergone changes as shown in figure 2. A second roentgen ray still shows a normal sized heart.

In considering the differential diagnosis of this case, the question of pericarditis must arise. Clinical and roentgen ray evidence point more to the diagnosis of coronary occlusion. In reviewing the electrocardiograms the deviation of the RS-T segments in leads 2 and 3 are noticed, although there is no deviation in the RS-T<sub>1</sub> until late in the series when a small Q<sub>1</sub> appears and a Q<sub>2</sub> becomes more perceptible. These factors also seem to point more to a myocardial infarction than to an uncomplicated pericarditis, as Schwab and Herrmann<sup>18</sup> have suggested.

#### COMMENT

As to what causes coronary artery disease in young adults, there are no positive opinions. White<sup>1</sup> believes that atherosclerosis with a variable amount of fibrosis is the main problem in coronary disease in youth and middle age and that infections do not play much of a rôle.

Family history is important. Musser and Barton<sup>14</sup> believe there are two quite distinct expressions of coronary occlusion. The one is seen in older people with general arteriosclerosis. The other occurs in younger individuals who do not have general arteriosclerosis but have relatively slight hypertension and a negative past history of any illnesses and often give a history of coronary occlusion occurring in one or more members of their families.

The use of tobacco is a questionable factor. Harkavy<sup>15</sup> writes about testing thirty-six cases of coronary artery disease, all smokers, 36 per cent giving positive intradermal reactions. White<sup>1</sup> quotes the story of an 18 year old boy who developed an inversion of T<sub>2</sub> while inhaling tobacco.

Syphilis, hypertension and diabetes are all etiological factors, but many of the cases in literature are negative in these respects.

#### PROGNOSIS

The immediate mortality in most of the cases published is quite low. Mullens<sup>6</sup> in his series

found no immediate mortality in patients whose attacks occurred before the age of 40 and the immediate mortality increased with age. White and Bland<sup>16</sup> reported that prognosis of coronary occlusion in young adults is fairly good, especially in regard to survival from the first attack. Later White<sup>4</sup> reported remarkably low mortality in fourteen cases occurring under the age of 40. Cooley<sup>17</sup> reported a case in which the first attack occurred at the age of 35, the man dying at 47 with the second attack.

#### SUMMARY

It is evident that coronary thrombosis attacks younger adults as well as older ones, probably much more often than is generally believed. The immediate mortality in cases of coronary thrombosis in young adults is much lower than that in older adults.

A case of coronary thrombosis in a young man aged 30 is described, with a review of the recent literature.

310 Lister Building.

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Preliminary to a consideration of disturbances of the intervertebral foramina, Lee A. Hadley, Syracuse, N. Y. (*Journal A. M. A.*, Jan. 22, 1938), reviews briefly the anatomy and pathology of the intervertebral disk. There are two distinct types of pathologic change in the intervertebral disk which produce thinning of this structure. Thinning allows the vertebral bodies to approach each other, so that apophysial subluxation or slipping of the posterior joints may result. Pain may be caused by bony impingement of the tips of the subluxated articular processes or by constriction of the intervertebral foramina.



## MODERN ADVANCES IN THE TREATMENT OF SEPSIS

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ST. LOUIS

A detailed report of the recent activities in the treatment of septicemia is a much more ambitious undertaking than I have in mind and could not be completely accomplished in a paper of twenty minutes. I shall merely recall some principles and relate some things that are not generally recognized in the application of those principles.

The definition of septicemia given to me as a medical student, namely "The process of bacteria growing and manufacturing their toxic products in the blood stream" will, I believe, have to be changed with our present understanding of the process. We no longer believe that bacteria multiply to any great extent in the blood stream, but the presence of bacteria in the blood depends upon their being constantly fed into the blood by a local focus that either opens into the blood stream or has set up a phlebitis in the neighboring veins. In a general way we include in the definition of septicemia any condition in which bacteria are found more or less constantly in the blood stream. This condition postulates a rather severe local infection and low resistance of the patient.

The consideration of septicemia as a general reaction to a local condition brings infection into the realm of surgery and certainly no course of treatment of septicemia is justified which leaves out proper surgical treatment. Indications for and against surgery are established along fairly definite lines, depending upon the type of organism and whether drainage or excision can be accomplished without opening up new channels of infection and breaking down the natural barriers that are being thrown about the process.

If all septic processes would remain localized, then surgery would answer our problem in the larger number of cases, but the continual scattering of clumps of pus through the blood stream will in the majority of cases set up numerous secondary sites of infection about these septic emboli. Any treatment to be generally successful must in a majority of cases act before the secondary foci have become of major consequence. Certain types of septicemias do not tend to metastasize. I have seen staphylococcus present in the blood stream for nine weeks without evidence clinically or at autopsy of secondary areas of infection, and such conditions as streptococcus viridans septicemia from the heart valves seldom give rise to serious secondary infection.

The medical dream since bacteria were discovered has been of a drug easily obtained and easily administered that could be introduced into the body

and without toxic effects would kill all pathogenic bacteria. Many such dreams have apparently come true, but after a time we have been forced to the conclusion that our wishes were overruling our judgment. Many of these drugs have eventually found a place in therapeutics but in a much lower position than they were brought forth to fill. The present chemical phenomenon is sulfanilamide, first introduced into this country under the trade names of prontosil and prontosil.

Already the bibliography on the subject vies with vitamins in number of publications and variety of cures, but during the last few months the possibility of toxic reaction is forcing itself on our consciousness. It is too early to completely condone or condemn, but the indications are that sulfanilamide has come to stay and will find a permanent if not commanding place in our list of valuable drugs.

With the advent of immunological principles, serum therapy was launched as the treatment for all infections. Today it plays a major rôle in infections, but only in those infections that have a strain specific etiology. Pneumonia, diphtheria, tetanus and such specific infections are highly susceptible to serum therapy. Not so with the so called pyogenic infections by such organisms as the staphylococcus, the streptococcus and the colon bacillus. The reason for this is the so called strain specificity of these bacteria. There are apparently thousands of strains of these organisms and the serum prepared against one strain has insignificant results against the bacteria of a different strain. Thus erysipelas and scarlet fever are both caused by hemolytic streptococci, but the serum produced against one will not neutralize the toxin produced by the other. The only logical serum treatment for severe sepsis is a serum prepared against the strain producing the infection; and with thousands of strains the only feasible method would be to have a serum prepared against the bacteria isolated from the individual infection. As an ordinary serum is produced over a matter of months ordinary commercial methods of manufacture are out of the question. The problem of strain specificity in pneumonia has been overcome by a method of rapid typing of the pneumococci and the use of a previously prepared type specific serum. Some work has been done along this line with the pyogenic organisms but the indications are that the strains are too numerous and too subject to variation.

I had the pleasure this summer of combining a vacation in Canada with a visit to Dr. Fred T. Cadham, Professor of Bacteriology at the University of Manitoba at Winnipeg. Dr. Cadham has reported a series of 100 consecutive cases of septicemia from various causes with a mortality rate of about 15 per cent. The average mortality rate of similar cases but with ordinary methods of treatment is about 80 per cent. Dr. Cadham's treatment

seems to be theoretically sound. He starts with a rather large colony of rabbits. Twice a week over a period of months and as long as the rabbits are in use he injects these rabbits with vaccines of all the different virulent strains of pyogenic bacteria he can obtain from his locality. When a severe case of sepsis comes under his care he sets a heavy culture and in twenty-four hours has a vaccine prepared against the specific organism causing the infection. This is injected into a few of his rabbits and twenty-four hours later he starts bleeding the rabbits from the heart and using their serum in the treatment. This necessitates a delay of 48 hours but his results apparently speak for themselves. His rabbits, highly sensitized to the production of antibodies, will apparently produce in twenty-four hours an antiserum that would require days under ordinary circumstances. The rabbit seems to be an ideal animal for the production of serum as its antiserum against most any antigen is generally a great deal higher in titer than the more commonly used animals.

The production of a highly specific antiserum is only a part of Dr. Cadham's system of treatment. In any destructive immunological process there are two types of antibodies. The first a specific thermostable body which is known as the amboceptor. It is this specific body that is supplied in any commercial antiserum. It has long been known that for the specific amboceptor to act there must be present in the blood another nonspecific substance known as the complement. This complement is normally present in human and all other fresh blood. It is not contained in specific prepared serums or present in minute amounts. For some reason there has been very little work that I can find concerning the amount and activity of complement in severe cases of sepsis. Dr. Cadham has titrated the complement in a number of cases and finds that in severe infection it is commonly very low. He also finds that the complement may be activated by supplying a small amount of fresh complement in the form of human serum. The serum apparently works much better than whole blood. It is to this action he attributes much of the favorable result of blood transfusion in sepsis. By titrating complement before and after whole blood transfusions he finds an immediate but temporary rise after the first transfusion, followed in a day or so by a drop. Succeeding blood transfusions cause a lesser rise and eventually show no result and the complement titer is lower than at the beginning. This possibly explains the phenomena all of us have seen in the apparent beneficial results of the first transfusion in sepsis and the less beneficial results from later transfusions.

Where serum is used instead of whole blood this complement titer remains higher without the subsequent tendency to drop, and each serum transfusion seems to completely reactivate the patient's serum. He has insufficient data to corroborate un-

deniably this statement but again his results seem to speak for themselves.

Blood and serum transfusions open up a great number of possibilities. Immunotransfusion where the donor has been immunized against the disease either by vaccine or recovery from a similar infection has been used in some instances with commendable results. In any case the average adult probably carries in his blood stream some immune properties against the ordinary infections. Whatever its benefits are, transfusion of some sort along with surgery is at the present time a generally recognized procedure. The benefit of blood transfusion in sepsis was strongly and constantly advocated in this city by Dr. George Ives long before it was a common practice.

Another specific type of treatment for septicemia used extensively in some parts of the country is by administration of an autogenous bacteriophage. Bacteriophage does not have the complete strain specificity of immune bodies, but the specificity is so definite that only indifferent results are reported when stock phage alone is used.

Probably the leading advocate of specific bacteriophage treatment in the country is Dr. W. J. MacNeal, Professor of Pathology and Bacteriology, New York Post-Graduate Medical School and Hospital.

His mortality in cases of pyogenic septicemia is also much below the average of cases treated by the usual methods. The preparation of an autogenous phage again introduces a delay in the treatment and a highly technical procedure, but again if his figures are to be relied on the method speaks for itself.

Our own experience with autogenous bacteriophage covers a large number of poorly controlled cases, but the large percentage of recovery, especially in staphylococcus septicemia, lead us to believe that Dr. MacNeal's reports can be duplicated.

The possibilities of combinations of treatment are interesting of conjecture. Only a few cases are on record. The Sayer Clinic in Sayer, Pennsylvania, reports a case of streptococcus viridans that was treated by a serum sent them by Dr. Cadham. In growing out the bacteria for vaccine Dr. Cadham found it was carrying a rather potent bacteriophage. He prepared both a broth phage and an antiserum, each specific for the infecting organism. The patient is apparently recovered some two years later. Since then they have reported a second case similarly treated with apparent recovery. I have had the pleasure of looking over the history of another case at the University of Manitoba which showed persistent positive viridans cultures and history and clinical findings of endocarditis. At the present time this patient also is apparently well. The advocates of this treatment do not hold it out as a cure for a large percentage of viridans endocarditis cases, but the fact that more than one case recovered while being given



this type of treatment is worthy of note. From a bacteriological and immunological standpoint the cure of viridans endocarditis is the acme of excellence. We have always considered that a case of viridans endocarditis reported cured was equivalent to the admitting of a wrong diagnosis, and in these cases we can be forgiven for reserving our judgment to a later date.

Dr. Cadham's and Dr. MacNeal's treatments are not particularly new, their papers being published in 1934 and prior. Is there a reasonable explanation why either method is not more popular? I can find no papers dealing adversely with bacteriophage treatment where the phage used was a carefully prepared autogenous phage. I can find no adverse comments either theoretically or practically with Dr. Cadham's autogenous serum.

I believe the explanation is that the process must be out of the hands of the average physician. We are taught to rely on drugs that can be produced commercially and handily packaged for our immediate use. In this respect sulfanilamide might prove ideal but the time may come when the careful practitioner will have a serum or bacteriophage or both in preparation and try his drug during the forty-eight hours' delay necessary for their preparation.

Another possible drawback to specific therapy is the cost. Autogenous preparation of serum and phage for general use will come in the price range of a minor surgical operation, and it might be prohibitive for the average patient to pay two surgical fees.

As it now stands we look at the summary for treatment of sepsis something like this:

1. Competent and intelligent surgery.
2. Supportive treatment such as blood transfusion or serum transfusion, preferably, we believe, the serum transfusion when the patient does not need the red blood cells.
3. Carefully considered use of the drug in vogue; at present sulfanilamide.
4. Where available, preparation of autogenous serum or bacteriophage, or both.

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#### EVALUATION OF THE SAFE PERIOD

Irving F. Stein and Melvin R. Cohen, Chicago (Journal A. M. A., Jan. 22, 1938), state that it may be assumed that there are some women in whom a safe period exists. The difficulty lies in the vast amount of scientific data pointing to the variability in ovulation time and of possible multiple ovulations in the cycle, and the inability to identify the safe period for most women. In their own series of the menstrual calendars for 1936 of 115 women, less than 20 per cent menstruated regularly enough to be candidates for safe period instruction. Furthermore, these women, according to the Latz-Reiner contraindications, must omit the method after confinement or miscarriage, after severe illness, shock or drastic alteration in the routine of life.

#### THE FUNCTION OF THE CHILD WELFARE PROGRAM IN MISSOURI

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COLUMBIA, MO.

At the last meeting of the Missouri State Medical Association the Committee on Maternal Welfare reported on the organization of a plan of refresher courses in obstetrics and pediatrics for the practicing physician. This work has now progressed to the point of covering half the state with these lectures given in councilor districts. The accepted course was planned after conferences with your committee and with Dr. Elliott of the United States Children's Bureau and Dr. Parran of the United States Public Health Service. Valuable information was also obtained from Dr. George M. Lyon in West Virginia, Dr. Godfrey of the New York State Health Department and Dr. Thomas Farmer of the Committee on Public Health and Medical Postgraduate Education for the Medical Society of the State of New York. Using information derived from the experiences of these organizations and considering our local needs a course of eight lectures covering general pediatrics was devised.

The councilors of the various districts and Dr. Goodwin and Mr. Bartelsmeyer were consulted, and the plan was adapted to the existing units of our state medical organization. The success and orderly progress of the course have been largely due to the efforts of these men and to the work of the local societies through their officers. Five councilor districts are covered in each course. Meetings are held at a convenient place in each district the same night each week for eight weeks.

The work to be accomplished by this effort should be briefly considered. Of first consideration, Missouri still has a high infant and childhood mortality. The rate of preventable sickness among children is still too high. As physicians we are not doing enough immunizing of young children against smallpox, diphtheria and typhoid fever. We could lower the incidence and death rate of infectious diarrheas in childhood. We need better control of the spread and proper care of tuberculosis in Missouri. We need greater activity in control and treatment of syphilis in childhood.

Our first step in the attempt to correct these conditions is the Pediatric Refresher Course for physicians. At these meetings the problems are discussed and interest concentrated with the idea of keeping ourselves more alert to the specific needs of the hour. Accordingly, the following subjects were chosen for the course:

1. "Care of the Newborn."
2. "Infant and Childhood Diet."
3. "Diseases of the Respiratory System."
4. "Diseases of the Digestive System."
5. "Whooping Cough, Measles and German Measles."

Read at the 80th Annual Meeting of the Missouri State Medical Association, Cape Girardeau, May 10-12, 1937.



6. "Smallpox, Chicken Pox and Mumps."
7. "Scarlet Fever and Diphtheria."
8. "Skin Diseases and Syphilis."

Each subject is handled in a manner designed to bring out facts helpful to the physician in the diagnosis, treatment and prevention of the disease and lowering the mortality.

The first part of the evening is devoted to a formal discussion of the subject chosen. Informal discussion of clinical application and case presentations follow. These clinical consultations are most valuable. The series, it is hoped, will give us a uniform medical plan for attacking our shortcomings. We are ready then to teach the people proper hygiene and diet for children. We are organized to give them vaccinations for typhoid, smallpox and diphtheria. We are ready to apply our skill in the actual treatment of disease in a manner that will lower mortality.

Our next consideration must be the proper medical education of the laity. In this effort we can profitably cooperate with civic groups, city and county officials, schools and the press as agencies of contact. The subject matter itself, however, must of necessity come from physicians.

I have given a few lectures to such groups over the state. To this end, every county medical society should have a public health committee to arrange educational meetings and immunization campaigns. This committee should work with local civic officials, local health officers and nurses and with parent-teacher groups that immunization and education in hygiene and diet be given in the physician's office individually rather than in large groups in some public meeting place. The committee should likewise aid in the same work for the indigent which should be carried out by local health physicians and nurses.

Activity along these lines will result in health education in vaccination being brought up to date. From this point on the education problem becomes that of the school child. Here again the education must be given by medically trained persons.

The function of the child welfare program in Missouri is the attempt through concentration of effort on the part of physicians to bring about better medical care and more general health education of the laity in hygiene and in preventive medicine. This will in turn lower the incidence of infectious disease, lower our child mortality and promote a healthier child to become the citizen of tomorrow.

It should involve cooperation and guidance by the physicians with the public health officers, the civil officers, the school teachers and the leaders of civic groups and the press throughout our state.

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A study of their records of human heart sounds and those reported by Lewis, Wolferth and Margolies, and Houssay has strengthened the conviction of J. K. Lewis and William Dock, San Francisco (*Journal A. M. A.*, Jan. 22, 1938), that the three normal heart sounds are due to sudden tensing of valve leaflets, with no appreciable muscular element.

## THE FUNCTION OF THE MATERNAL WELFARE PROGRAM IN THE STATE OF MISSOURI

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There are four reasons why an active maternal welfare program is essential in the present day practice of obstetrics. Each reason is deserving of careful thought and consideration but since they have been considered in detail in a previous publication<sup>1</sup> it should suffice to refer to them briefly at this time.

First, maternal mortality rates in the United States are high and have remained at about the same level for the last thirty years. In 1901 the maternal death rate was 8 per 1000 live births and at the present time it is almost 7 (6.62) per 1000. This is a condition about which all of us should be concerned.

Second, there is an obvious lack of proper education of the laity in matters pertaining to the significance and importance of good prenatal care. This is indicated by the fact that at present only 2 per cent of all prospective mothers receive the benefits of good prenatal care. The majority of general practitioners are qualified to give this care to their patients but their patients will not come to them early enough to give the physician a chance to consider the patients' welfare in terms of adequate prenatal care. The physician's main task is that of healing the sick, therefore he cannot go out and solicit his patient's patronage but he can advise them and care for them after his services have been sought. Many women have never heard of prenatal care, hence it does not occur to them to consider the advisability of seeing their doctor before the latter months of pregnancy have been reached, unless their reason for doing so is to find out how much he is going to charge to attend her at the time of delivery; but the patients to be included in this unusual category are so surprisingly few nowadays that it is impossible to think of this "phenomenon" in terms of prenatal care. Consequently, it seems to me, that before one can expect every doctor doing obstetrics to practice good prenatal care, the laity must know what it is all about and must be "sold on the idea" sufficiently to prompt them to see their doctor as soon as they think they might be pregnant rather than wait until they are sure or are about ready to deliver.

Third, the majority of men engaged in general practice in smaller communities do not keep up on current obstetrical trends and accomplishments. This is not because of a lack of interest or incentive to do so but because they cannot find sufficient time away from their work to avail themselves of the advantages to be derived from a postgraduate

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<sup>1</sup>Read at the 80th Annual Meeting of the Missouri State Medical Association, Cape Girardeau, May 10-12, 1937.

course of instruction in this or any other subject.

Fourth, we know that many who do attend postgraduate courses of instruction in obstetrics find that much of the information thus obtained cannot be adapted to their own private practice. In the various medical centers and hospitals where these courses are available they see how patients are handled and deliveries conducted when every possible facility is at hand and helpful assistance is always adequate if not unlimited; but this ideal situation does not obtain in the hospitals in their own community and certainly not when a delivery is conducted in the home. Moreover, statistics show that by far the majority of deliveries in smaller communities are conducted in the home. Human nature prompts one to be primarily interested in those aspects of any situation that offer the greatest opportunity for personal gain and accomplishment, hence those who attend these postgraduate courses have to sift through this new information in order to find that which will be of particular help to them in their own practice. Many times after this has been done one finds that he has paid dearly for the benefits derived therefrom and wonders if the effort has been worth while.

Some type of maternal and child welfare program has been started in almost every state in the Union. The maternal welfare phase of the program that has been developed for the State of Missouri has been made possible through the cooperation of the State Board of Health and the Maternal Welfare Committee of the State Medical Association, under the supervision of the United States Children's Bureau with funds supplied by the State of Missouri and the Government through social security legislation. The "Missouri Plan" was originated and developed by the members of these organizations and is strictly original. It was one of the first to be submitted and has been used as an example by many other states in planning a program of their own. It has received favorable comment from everyone who is acquainted with its principles. It should be stated in passing that the writer had nothing to do with the formulation of this plan since he did not enter this work until after it had been completed and approved by the Children's Bureau. It comprises a series of eight lectures in obstetrics that are presented in the form of a postgraduate or refresher course. One lecture is given each week in five different localities. The meeting places are planned and arranged by the State Medical Association working in cooperation with their Councilors and the various county medical societies in such a way as to make each lecture available to every practitioner of medicine in good standing in four or five adjacent counties in the same district. Details for these meetings are arranged by the officers of the county societies included in each series. The same lecture is given in five different places each week on consecutive days. Another lecture is given the following week

over the same circuit and this is continued until the entire series of eight lectures has been given in each locality. When one series has been completed another is started in adjacent councilor districts and the same plan is followed again. In this way the program is being made available to every doctor in the state who is in good standing without loss of time from his work and without cost.

These lectures include talks on those aspects of the subject with which the general practitioner has to contend in the conduct of his own obstetrical work. They are made as practical as possible in every way since time will not allow us to dwell upon those phases of the subject having a definite interest but of relatively little or no practical value in the conduct of the "average run" of deliveries. Each lecture is supplemented with motion pictures which help to explain the particular phase of the subject being discussed. The films play no small part in making these presentations interesting and worth the time required to attend them. A mannikin, models and blackboard illustrations are also used in conjunction with some of these lectures. The lectures are followed by an informal discussion of the subject at hand or of any other type of obstetrical or gynecological problem that is of interest to anyone present. This time is also used for the presentation of individual case histories for consideration and discussion.

Whenever clinical material is available a clinic is conducted in addition to the lecture and is usually held the following morning. Only those patients who cannot afford to pay a medical fee are acceptable for consideration at these clinics. Because of the relative paucity of obstetrical material, any type of gynecological problem available is included in these clinical demonstrations providing the patient is an indigent. These cases are used to demonstrate the type of pathology found and the condition is considered in detail. Treatment is included in this consideration but no attempt is made to outline a course of treatment for the particular case at hand. Perhaps this seems unusual but it is not when one considers that this program has been designed and developed along lines that are strictly educational, therefore it is considered from an academic standpoint only since treatment as such of any particular patient has no place in the development or function of this program.

Arrangements for these clinics are made as follows: One or two members of the local society are designated to whom any doctor in the district may refer when he has a patient who qualifies as a candidate for clinical consideration. The local representative then arranges for the time and place at which the clinic will be held. Whenever possible, clinics are arranged so as to make it convenient for those attending the lectures to be present. Announcements of these clinics are made ahead of time, if possible, so as to give those interested a chance to attend. These demonstrations are held wherever facilities are easily accessible, either in



the hospital, the doctor's office or, if necessary, in the home of the patient. When the lecturer arrives in town he gets in touch with these men to see what plans have been made and then arranges his program accordingly. In this way it is possible to conduct clinical demonstrations that do not interfere in any way with the academic phase of the program.

To date, this plan has worked out satisfactorily. The cooperation in this regard has been gratifying and encouraging. We hope it will be continued until the entire state has been covered at least once.

This series of lectures has been compiled in the form of a book in which each subject is presented in more detail than is possible at the meetings. The reason for this is that we are trying to cover the subject of practical obstetrics in a small series of eight lectures, hence it is necessary to consider more than one phase of the subject at each lecture and to do justice to each of them would require hours of steady talking. So, in order to keep these meetings from becoming too long it is necessary to omit some of the detail that should be included in order to make each treatise entirely comprehensible. To compensate for this we have included this additional information in the book without interfering with its potential usefulness as a quick reference. It was necessary to do this since the book was designed to serve only in this capacity. That is why we suggest that it be kept readily available for reference when time will not permit one to go to the textbooks for information and advice. A copy is given free of charge to every doctor attending these lectures. Additional copies may be obtained at cost from the Secretary of the State Board of Health. They are now ready for distribution and are being given out at the last lecture in each series.

Our ambition is to make this program practical and to adapt it to local conditions and circumstances whenever possible. In order to do this a first hand knowledge of local needs and interests is essential. It is interesting to note the variations that exist in this regard in different communities. Therefore, in order to obtain this information a list of subjects dealing with obstetrical and gynecological problems is given out during the conduct of each lecture series. It is suggested that every physician check the subjects in which he is most interested and to add to our list any additional subjects he would like to have discussed. Then these lists are returned to us and filed away for future reference. They will be used for arranging that part of the program which is to follow as soon as the entire state has been covered with the present series of lectures. The new series will include subjects taken from these lists and, when indicated, special lectures will be prepared for each community if such is necessary in order to conform to the information thus obtained. We feel that this plan will be more interesting and perhaps more helpful

than one which includes a uniform series of lectures to be presented in every community regardless of local situations and local needs.

The education of the laity in matters pertaining to good prenatal care has also been taken into consideration in planning this program. The ignorance of the laity in this regard has already been referred to but we would like to add that the ambition of everyone interested in the development of this program is to make the public "prenatal care conscious" just as they are being made "cancer conscious." It is felt that our task in this respect is a large one but we feel sure that it can be accomplished by an intensive program of education designed to place before the public those aspects of the problem which require complete cooperation of the prospective mother in order to be solved. The laity must be made to understand what is meant by "the complete supervision of the prospective mother from early in pregnancy"; they must know the meaning of "preventive obstetrics" and what constitutes "good prenatal care" before they can be expected to do their part in helping to establish the universal practice of prenatal care throughout the country. Complete cooperation of the patient is essential in order to fulfill this important need and the practice of good prenatal care will have to be adopted much more extensively than it is now before one can expect our present infant and maternal mortality rates to be lowered to the point where we can be anything other than ashamed when they are compared with rates from some other countries.

The first step in this educational program for the laity has been incorporated in our present program. It includes a lecture to the laity in each community in which the refresher course in obstetrics is being given and is arranged whenever possible in conjunction with these lectures by the local medical society or under its supervision. This presentation is designed to introduce the subject of prenatal care, to explain its principles and to present reasons why good prenatal care is essential in the present day practice of obstetrics. Motion pictures are used in conjunction with this lecture also, to illustrate why the laity must become familiar with the principles and prerequisites of good prenatal care.

In addition to these lectures, newspaper articles dealing with the subject more in detail and stressing the relationship existing between good prenatal care and the obstetrical subject being presented to the local medical men during that particular week are published weekly in local papers. These articles are prepared by us and submitted to an officer of the local society who in turn sees to it that they are published in the newspaper each week. This step is only the beginning since it is planned to include a series of lectures to the public in conjunction with our next series of lectures to the medical profession, arranged in such a way as to make it possible for both to be presented simul-

taneously. In this way we hope to bring about the education of the prospective mothers of today and tomorrow in matters pertaining to the significance and importance of adequate prenatal care to such an extent that they will be ready and willing to cooperate with their doctors in every way possible when the occasion arises.

It is planned to carry on this type of work for the next few years and to adapt it to local conditions as much as possible. Because so much remains to be done we will have to be patient but evidence of improvement will eventually manifest itself in a definite lowering of our present infant and maternal mortality rates and that after all is what we are working for.

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## A REVIEW OF IDIOPATHIC ULCERATIVE COLITIS

WITH REPORT OF FIVE CASES

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#### DEFINITION

Idiopathic ulcerative colitis is a most serious and relatively common disease affecting the large bowel; serious from the standpoint of morbidity and mortality. It has been designated as "idiopathic," "nonspecific," "bacterial," "hemorrhagic," and by the German writers as "colitis ulcerosa gravis."

The recent epidemic of amebic dysentery emanating from Chicago has made us "colitis conscious." A voluminous literature has resulted, as ulcerative colitis has interested the gastro-enterologist, proctologist, bacteriologist and surgeon, and the bacterial etiologic controversy has swamped the literature. The word "chronic" in connection with idiopathic ulcerative colitis is used in that the disease tends to show chronicity.

#### HISTORY

Idiopathic ulcerative colitis was first described by Wilks and Moxon<sup>1</sup> in 1875. It was described by Sir William Hal White<sup>2</sup> in 1888, and by Gemmel<sup>3</sup> in 1898. The latter stated that it differed from bacillary dysentery. In 1919 Logan,<sup>4</sup> of the Mayo Clinic, gave a careful study of 117 cases.

#### ETIOLOGY

There still exists much doubt and controversy as to the etiology. There have been many possible factors mentioned: (1) Specific bacterial infection; (2) vitamin deficiency states; (3) allergy; (4) neu-

rogenic or psychogenic factors; (5) endocrine disturbance; (6) unknown toxin; (7) constitutional factors, and (8) calcium and parathyroid deficiency.

#### 1. SPECIFIC BACTERIAL INFECTION

Many organisms have been incriminated, but chiefly the *Bacillus dysentery*, *Bargen diplostreptococcus* and *Bacillus coli*. Different workers find other streptococci, amebae, *Bacillus pyocyaneus*, *Proteus vulgaris*, *Enterides* of Gärtner, *Mucosis capsulatus*, staphylococci, *Bacillus lactis aerogenes*, pneumococci. The difficulty of the isolating of organisms depends on the fact that there are so many bacteria present in the colon. In 1903 Boas<sup>5</sup> was the first to suggest that ulcerative colitis was an independent disease and not dysentery.

Many workers, and there is a definite trend to this view, feel that ulcerative colitis belongs to the dysentery group. Only one third of the dysentery cases in the Great War gave positive cultures for *B. dysentery* (Flexner, Shiga, Sonne types). Hurst,<sup>6</sup> of the Guy's Hospital, since his war experience, feels that ulcerative colitis is a form of bacillary dysentery, with a *B. dysentery* attacking and disappearing, leaving the weakened colon a prey to secondary invaders. Felsen<sup>7</sup> as well as Winkelstein<sup>8</sup> feels that ulcerative colitis, regional ileitis and ileocecal granuloma are all varied expressions of the same fundamental disease process started by *B. dysentery*. Mackie<sup>9</sup> as well as Winkelstein and Herschberger<sup>10,11</sup> isolated *B. dysentery* or found dysentery agglutinins in a great number of their cases. Winkelstein<sup>10</sup> also found that 36 per cent of of a group (forty-one cases) of ulcerative colitis cases had bacteriophage for dysentery organisms in their stools. Mackie<sup>9</sup> found cultural or serologic evidence of bacillary dysentery in 42 per cent of his cases. Strauss,<sup>12</sup> Leusden,<sup>13</sup> Thorlakson,<sup>14</sup> Hurst<sup>6</sup> and Schur<sup>15</sup> believe that ulcerative colitis belongs to the dysentery group, the *B. dysentery* being the original invader. Bacillary dysentery and ulcerative colitis may be the same disease, but ulcerative colitis is noninfectious. Many feel that amebae or *B. dysentery* initiate the attack and secondary invaders produce the ulcerative colitis.

In 1924, J. A. Bargen<sup>16</sup> of the Mayo Clinic reported extensively on his work with the finding of a Gram positive diplostreptococcus. He produced colonic lesions in rabbits and dogs by intravenous injections of this organism. Bargen and his co-workers feel that the diplostreptococcus is specific and that the vaccine and serum have yielded splendid results. Bargen has found this organism in cultures of teeth, tonsils and heart blood. His work has been accepted and confirmed by Fradkin and Gray,<sup>17</sup> by Lups<sup>18</sup> in Holland and many other workers. Paulson<sup>19,20</sup> and others could not produce ulcerations in rabbits. Brown<sup>21</sup> and Bassler<sup>22</sup> and a host of others attack the Bargen etiology. Hurst<sup>6</sup> believes the Bargen organism is a mutation of the streptococcus normally found in the

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bowel. Gutierrez, Lastra and Blanco<sup>23</sup> could not produce lesions in rabbits, but when other anerobic intestinal bacteria were added to the Bagen organism the rabbits developed diarrhea and ulcerations. They feel that these anaerobes and not the Bagen organism caused the ulcers. Winkelstein<sup>8,10</sup> feels that Bagen has described a secondary invader.

Schwartzman,<sup>24</sup> Satterlee<sup>25</sup> and Bassler<sup>22,26</sup> feel that virulent coli are responsible. Schwartzman believes that the mucous membrane may become vulnerable to *B. coli*. He has perfected an antitoxic anticoli horse serum which Winkelstein<sup>8</sup> has been using with good results. Torrey<sup>27</sup> in twenty-eight cases of ulcerative colitis isolated a strain of *B. coli* in twenty-five cases. Nicholls<sup>28</sup> in her work found no difference in virulence of the *B. coli* of ulcerative colitis and of healthy individuals.

Rolleston,<sup>29,30</sup> Lockhart-Mummery,<sup>31</sup> Brown,<sup>21</sup> Yeomans<sup>32</sup> emphasize the importance of the streptococcus. Dack, Dragstedt and Heinz<sup>33</sup> report the isolation of a Gram negative anerobic rod through ileostomy wounds in three cases of ulcerative colitis which they call "*Bacterium necrophorum*."

## 2. VITAMIN DEFICIENCY. 3. ALLERGY

The theory of an avitaminosis has some supporters. Ulcerative colitis has a resemblance to sprue and pellagra. Some feel that the deficiency states in ulcerative colitis are secondary. In 1935 Mackie and Pound<sup>34</sup> observed evidence of deficiency states in cases of ulcerative colitis. The buccal and lingual mucous membranes have shown abnormalities like one sees in sprue, pellagra and pernicious anemia. Skin changes, as occur in vitamin A deficiency and nutritional edema are seen. Peripheral neuritis has been reported. A reduction of blood calcium and disturbance of acid base mechanism are shown. With special roentgen ray studies Mackie and Pound<sup>34</sup> find changes in the small intestine in ulcerative colitis which they feel go with deficiency states. They report small intestine changes with variation in contour and size of the lumen and alteration of the normal motor phenomena. They frequently show the lumen of the duodenum dilated, often slow passage through the jejunum with isolated sausage shaped loops. They claim these changes may mean varying degrees of edema of the mucous membrane. The nature of the process leading to this may be infection of the intestinal wall, local allergy or deficiency state effect. Mackie feels that ulcerative colitis involves a complex mechanism, including primary and secondary infection, deficiency states resulting from inadequate diet, or to a small intestine involvement, and an allergic state to certain foods and bacteria. D. C. Hare<sup>35</sup> feels that ulcerative colitis cases show a deficiency state. Vitamins A and B are necessary for healthy intestinal mucous membrane and for maintaining its resistance to infection. He feels that anemia also plays a great part. Larimore<sup>36</sup> believes that there is a definite avitaminosis in ulcerative colitis.

## 4. NEUROGENIC AND PSYCHOGENIC FACTORS

Sullivan<sup>37</sup> reported psychogenic factors causing the disease. He believes that ulcerative colitis is related to neurogenic diarrhea. He employs psychoanalysis and psychotherapy. John L. Kantor in discussing this paper admits that the disease produces psychoneurotics but does not agree that psychogenic factors produce the disease.

Felsen<sup>38</sup> feels that there is some disturbance in the nervous mechanism of the bowel wall, lowering its resistance. He finds in some cases a definite hypertrophy of the plexus of Meissner and Auerbach.

## 5. ENDOCRINE FACTORS 6. UNKNOWN TOXINS

There is no definite evidence for endocrine disturbance nor an unknown toxin as causative factors for ulcerative colitis.

## 7. CONSTITUTIONAL FACTORS

Efforts to point out individual susceptibility are made. These are not established. Some point to an intestinal vulnerability with lowered colon resistance.

## 8. CALCIUM AND PARATHYROID DEFICIENCY

Haskell and Cantarow<sup>39,40</sup> found that in ulcerative colitis calcium in the tissues is increased at the expense of the blood. Their therapy with calcium and parathormone has yielded results in their cases. They feel that calcium benefits the nutrition of tissue, relieves spasticity and hyperirritability of the colon and checks bleeding.

## INCIDENCE

Ulcerative colitis is not epidemic and shows no seasonal variation. The sexes are affected about equally. The disease is most commonly seen in the second, third and fourth decades with average age at about 30. It is rare in children in whom it tends to be particularly fatal. The duration is from a week to twenty years or longer. At Peter Bent Brigham Hospital there were seventy-three cases in twenty years, from three to four cases per year. At Massachusetts General Hospital there were 149 cases in twenty years, about seven per year. At Mt. Sinai Hospital, New York, they are now seeing 125 cases per year, including the cases of amebic dysentery and bacillary dysentery. At Cedars of Lebanon Hospital, Los Angeles, California, there were thirty-four cases in seven years, about five cases per year.

## PATHOLOGY

The disease usually begins in the lower bowel. The lesions may be studied through the proctoscope or sigmoidoscope during life or postmortem.

The mucous membrane early shows intense hyperemia and edema. There is a friable mucosa, bleeding easily, showing small submucous hemorrhages. Later there are seen small miliary abscesses with slight elevations. These rupture,

showing pus and small punctate, shallow ulcers. The latter coalesce producing larger ulcers with irregular borders and grayish base covered with mucopus and blood. Islands and peninsulas of mucous membrane surround the ulcers. Ulcerations may involve the submucosa and muscularis and may perforate.

The chronic cases develop a rigid, thick, fibrotic wall, with very small islands of mucous membrane. A polypoid condition, pseudopolyposis, may develop from these islands of mucosa. Stricture of the bowel may occur. Carcinomatous change in the pseudopolyps may occur but is rare. The terminal ileum may be involved later in the disease.

#### SYMPTOMS

Kiefer<sup>11</sup> of the Lahey Clinic divided the cases into three groups: (1) The nontoxic, nonsclerotic with no evidence of toxemia or systemic manifestations. (2) The nontoxic, sclerotic with marked permanent changes to colon and rectum, with rigid, contracted and stenosed bowel from long-standing colitis. These two groups begin insidiously. They show weakness, flatulence, indigestion and abdominal discomfort. Some show loss of weight and slight pallor. The temperature is normal to slightly elevated. (3) The toxic with septic fever, leukocytosis, anorexia, nausea, vomiting, rapid pulse and prostration. In this group are the acute fulminating type (5 per cent of all cases of ulcerative colitis) where no treatment seems to be of any value. They have a rapid onset with severe anemia, emaciation and an anxious, hopeless expression.

All cases of ulcerative colitis have from five to twenty or more stools per day, with blood, mucus and at times pus. The variable severity of the manifestation, with a tendency to remission and exacerbation, are the chief characteristics of the disease. The extent of the bowel involvement is no criterion of the severity of a case.

#### PHYSICAL FINDINGS; SIGMOIDOSCOPIC AND ROENTGEN RAY

The general physical examination is rather negative, with tenderness in the abdomen along the colon. The blood picture shows a mild or severe hypochromic anemia with white blood count 8000 to 15,000. The sigmoidoscopic picture is that described above under pathology. The roentgen rays with barium enema show an irritable bowel. The affected part seems to have "dropped out" due to hypermotility. Haustrations disappear. At times one sees a feathery or moth-eaten or saw-toothed appearance of the bowel wall. With hypertrophy of the mucous membrane rests, pseudopolyposis shows itself with a marbled appearance on roentgen ray, especially after the Fischer contrast air injection.

#### COMPLICATIONS

Stricture of bowel, pseudopolyposis, cancer, perirectal abscess or perforation may occur. Achlorhy-

dria is commonly found. Eye disturbances (? vitamin A deficiency) have been found. Arthritis, renal complications or mesentery thrombosis may occur.

#### DIFFERENTIAL DIAGNOSIS

An accurate history, sigmoidoscopic examination, study of stools and ulcers for amebae and other parasites, stool and ulcer cultures for typhoid-dysentery group, agglutination tests for dysentery-typhoid group and undulant fever, tuberculosis smears, blood Wassermann or Kahn test, blood culture, blood counts and colon roentgen rays should all be done to differentiate from the following: Amebic dysentery, bacillary dysentery, hemorrhagic proctitis, cancer of pelvic colon and rectum, rectal polyps and polyposis of colon, purpura, regional ileitis, tuberculosis of colon, syphilis of rectum, typhoid, diverticulitis and hemorrhoids.

Amebic ulcerations are usually undermined. Bacillary dysentery may be indistinguishable from ulcerative colitis. Purpura shows reduction of blood platelets and usually has bleeding from other parts. Diverticulitis rarely bleeds. Hemorrhoids are mentioned as many cases of ulcerative colitis have been mistakenly operated on for hemorrhoids.

#### TREATMENT

The treatment of idiopathic ulcerative colitis has been on the whole quite unsatisfactory. Just as the etiology is uncertain, the treatment is varied. We should not speak of the cure of this disease but of its control. Practically all agree on:

1. Rest in bed during acute symptoms, mental rest, outdoor regime when improved, sunlight, ultra-violet, warm application to the abdomen.
2. Smooth, nonroughage, low residue diet of about 3000 calories per day, with sieved cooked fruits and vegetables, tender meats. Milk is usually not well tolerated. The diet lists of Barger or Winkelstein<sup>8</sup> are of this type.
3. Vitamins are given, either the concentrated more recent ones or orange juice, tomato juice, butter, yeast.

The diet used for ulcerative colitis in Mt. Sinai Hospital, New York, by Winkelstein<sup>8</sup> follows:

Breakfast: Orange juice or grapefruit juice; stewed fruit (strained); eggs, soft or hard boiled, or poached; white bread or toast with butter or jelly, and buttermilk, thin cocoa or tea.

Noon meal: Small portion of scraped beef or lamb, lamb chop, fish, minced white meat of chicken (not fried); boiled, mashed or baked potato; strained asparagus, carrots, string beans, spinach, tomatoes, peas; stewed fruit (strained), as pears, peaches, applesauce, ripe banana, custard, junket, jello; white bread or toast with butter or jelly; buttermilk, thin cocoa or tea, and tomato juice.

Supper: Milk soup with strained vegetables or clear soup; eggs, soft or hard boiled or poached; small portion of cream or pot cheese; well cooked cereal with milk and sugar, or strained vegetable as above; stewed fruit (strained), ripe banana, cus-



tard, junket, or jello; white bread or toast and butter, and buttermilk, thin cocoa or tea.

#### MEDICAL TREATMENT

*Oral Medication.*—There are employed opium, codeine, paregoric, belladonna, bismuth subnitrate, bismuth subcarbonate, bismuth subgallate, iron preparations, tannin, tannalbin, animal charcoal, Kaolin, gentian violet and other dyes, liver extract, hydrochloric acid for achlorhydria. Logan<sup>4</sup> recommended tr. iodine by mouth, on the basis that leukocytosis may be produced. Calcium and parathormone are recommended by Haskell and Cantarow.<sup>39, 40</sup> Winkelstein<sup>8</sup> gives deodorized tr. opium, 10 minims after every alternate bowel movement during the acute stage. He is also using a vegetable gum which increases the consistency of the stools. Saraka A is of this type. No one has as yet proposed the more recent antistreptococcus drugs, prontosil and prontosil or sulphanilamide.

*Rectal Medication.*—Most workers have given up rectal therapy. Tr. opii, 2 per cent boric, potassium permanganate, ichthyol, bismuth subcarbonate, starch water, ½ per cent silver nitrate, protargol, 1 per cent yatren, peroxide, tripaflavin, neutral acriflavine (1:4000 in normal saline), tannic acid and suppositories containing ichthyol, belladonna and opium have all been used. Rectal insufflation of powders, such as dermatol, xeroform, orthoform and calomel have their advocates. Soper<sup>42</sup> uses calomel and bismuth subcarbonate, equal parts, into bowel with a blower and catheter. Felsen<sup>43</sup> employed oxygen, 250 cc. per hour (18 to 20 bubbles per minute) in alternate hours while patient is awake. Recently azochloramid, 1:2000 in olive oil, 3 to 6 ounces, twice daily, instilled into rectum has given good results according to Winkelstein.<sup>8</sup>

*Intravenous and Intramuscular Medication.*—All agree that blood transfusions are valuable as well as glucose and saline intravenously in acute cases. Montague<sup>44</sup> uses buffered citrates intravenously. Mercurochrome intravenously has been used. Emetine and carbarsone should be given a ten day trial on the chance that amebae may be present. Intramuscular milk, yatren casein and intravenous typhoid vaccine have been used rather unsuccessfully. Concentrated liver extract intramuscularly is employed.

*Specific Therapy.*—Polyvalent dysentery serum seems to help many cases. The serum of Bargaen might help. The antitoxic anticoli serum of Schwartzman has helped many cases according to Winkelstein.<sup>8</sup> Results with Bargaen vaccine have been variable, in some hands encouraging, in others disappointing.

*Other Therapy.*—Sullivan<sup>37</sup> treats ulcerative colitis with psychotherapy. The Mayo group favor the irradiation of foci of infection, teeth, tonsils and sinuses.

#### SURGICAL TREATMENT

1. Ileostomy, single barreled, usually the operation of choice.

2. Appendicostomy with irrigation.

3. Caecostomy, with or without irrigation.

4. Colectomy, partial or complete, after previous ileostomy, indicated for polyposis, recurring attacks of bleeding, fever and malaise for continued anemia, for failure to gain weight and strength and for chronic cases that cannot get well without colectomy.

5. Ileosigmoidostomy in occasional case.

The results in surgical treatment are not yet encouraging. The question of surgical intervention is difficult to decide. Most workers feel that conservative surgery, preferably ileostomy that puts the colon to rest, should be done. Ileostomy is done in those cases with increasing toxemia and those who are definitely failing under medical management. As a life saving measure it is apparently deferred too long. Even if done early, in some of the extremely fulminating cases, it is doubtful if ileostomy would have prevented death.

Cattell<sup>45</sup> of the Lahey Clinic advises surgery if medical management fails after two or three weeks. "It must be recognized," he says, "that surgical intervention in these acute cases is very serious and a high mortality must be accepted."

Kiefer<sup>41</sup> of the Lahey Clinic states that it is difficult to compare results with different groups and various forms of treatment because of variable severity of the manifestations of ulcerative colitis. This variation and severity is the most important factor in determining the final outcome of an individual case.

Santee<sup>46</sup> of Cornell surgical service at Bellevue advises operation (cecostomy) on resistant, subacute cases, and chronic cases with exacerbation.

Kunath<sup>47</sup> of the Iowa University group says the acute fulminating case is definitely surgical; there is no need to procrastinate. They do appendicostomy and cecostomy with bowel irrigation.

Crohn and Rosenak<sup>48</sup> of Mount Sinai Hospital, New York, prefer ileostomy. Their surgical mortality is 33 1/3 per cent.

McKittrick and Miller<sup>49</sup> of the Massachusetts General Hospital state their indications for surgery: (1) To be done early in severe cases; (2) massive hemorrhage; (3) persistent fever and high pulse; (4) persistent vomiting, nausea, anorexia; (5) severely increasing abdominal pain and distension, (6) continued bloody diarrhea with severe anemia not improved by four transfusions, 500 cc. at from four to seven day intervals.

#### STATISTICAL SUMMARIES ON ULCERATIVE COLITIS

At the Mayo Clinic they are doing fewer operations than formerly; eighty-two were operated on with forty-one deaths; operative mortality 50 per cent; nine fulminating cases had surgery with six deaths; operative mortality 67 per cent.

Guy's Hospital reports operative mortality 44 per cent.

Massachusetts General Hospital, 40 per cent of 149 cases were operated upon. There were twenty-

seven deaths in all cases, 18 per cent mortality of the whole group; twenty deaths followed surgery.

Lahey group reported fifty-five cases; mortality in the toxic group 62 per cent; in the entire group 18 per cent; thirty cases were improved and fifteen cases were unimproved; ten died.

Crohn and Rosenak<sup>48</sup> of Mount Sinai, New York, followed seventy-five of their ninety cases. Of these seventy-five cases, thirty-three or 44 per cent, were cured; twenty-three, or 30 per cent improved; eight, or 11 per cent are invalids; eleven, or 15 per cent died. Ileostomy had a mortality of 33 1/3 per cent.

Winkelstein<sup>8</sup> of Mount Sinai, New York, reports in January, 1937, 18 per cent mortality in his group.

Emery and Wosika<sup>50</sup> of Peter Bent Brigham Hospital report on thirty-three out of seventy-three cases: ten cured (33 per cent); four improved (12 per cent); seven not improved (20 per cent); twelve died (36 per cent).

At the Cedars of Lebanon Hospital, Los Angeles, California, there were thirty-four cases since 1930 in 40,000 admissions, average about five cases per year. The ages were from 13 to 60, most of the cases being in the second and third decade. Duration was from three days to twelve years. Patients included nineteen males and fifteen females. Surgery was done in six cases; of these three died, mortality 50 per cent. There were four other deaths without surgery; seven deaths in all with mortality in this group 20 per cent. These cases have not been followed so it is difficult to divide them into improved or unimproved cases.

#### REPORT OF CASES

Case 1. K. R., school girl, aged 15, was first seen November 21, 1936. The family history was negative. Except for a rectal prolapse early in childhood there was nothing significant in her past history. She was at a girls' camp the previous August. She appeared peppy and pale since then. She had fever, nausea, vomiting and slight diarrhea but no abdominal pain. Later, we obtained the additional history of frequent bloody stools. She did not tell her parents of this as she feared a rectal operation remembering her prolapse a few years back. Patient of asthenic type with greenish pallor resembling chlorosis; pearly sclerae. There was no jaundice, no edema, no glandular enlargement, no nuchal rigidity, no sinus tenderness. Reflexes normal. Temperature 100.5; pulse 120. Nose, throat and teeth negative. Lungs clear. Heart not enlarged; showed a pulmonary, systolic hemic murmur. Spleen and liver not palpable. Some tenderness in right upper quadrant. Fluoroscopy of chest negative. Urine showed a febrile albuminuria. Blood counts: Hemoglobin 39 (Sahli = 6.74 gm.); R. B. C. 3,328,000; C. I. = .59; W. B. C. 11,840; Schilling differential of the 52 per cent neutrophils, 13 per cent were stabs; lymphocytes 38 per cent; basophiles 1.5 per cent; eosinophiles 8.5 per cent. Stained smear showed a hypochromic anemia with slight anisocytosis, slight poikilocytosis, marked hypochromasia. Platelets appeared normal. Stool showed 3+ occult blood, with mucus, pus cells and red blood cells; no ova, no amebae or other parasites present. Stool culture was negative for typhoid-dysentery group.

On November 23, 1936, the blood smears showed 14 per cent eosinophiles. There were no skin lesions, no

evidence of trichiniasis, no intestinal parasites to explain the eosinophilia. On November 24, 1936, she was hospitalized. She showed bloody diarrhea, with from six to twelve stools daily, continuous fever, abdominal tenderness with no masses. She was put on a non-roughage diet of high caloric value, with vitamins A, B, D, tincture iodi by mouth, paregoric and codeine to control diarrhea, iron by mouth, and concentrated Lilly liver extract, intramuscularly, daily. She was given blood transfusions on November 25, December 11, January 9, each time 500 cc., and on January 28, 300 cc.

She appeared to improve somewhat after the first few transfusions. Agglutination to typhoid, paratyphoid A and B, and undulant fever was negative.

On December 5, 1936, patient started to go down hill again; had from ten to fifteen stools per day. On December 11 report of stool culture showed *Streptococcus fecalis*; no *Bargen bacillus*. Roentgen ray examination with barium enema (fig. 1) showed typical picture of severe ulcerative colitis extending through the entire colon. Her temperature ranged between normal and 103.6, continuous, remittent or intermittent; pulse from 90 to 150, respirations from 20 to 32.

On December 18, 1936, blood calcium was normal, 9.3 mg. Patient had a severe glossitis, her tongue being painful, swollen and fissured. This lasted for several days. At this date patient had been under medical management for four weeks and we were wondering whether surgery was not now indicated.

On December 22 patient developed a pleuropneumonia, right base with friction rub and suppressed breath sounds and roentgen ray findings of consolidation. Heart was not enlarged but showed a systolic murmur over the mitral area, not transmitted.

On December 27 patient's chest was clear. She suddenly developed pain in the middle of her right thigh; suggesting embolus or osteomyelitis. Blood culture was negative. Pain in right thigh disappeared after a few days.

December 29 patient quite tender along long bones. She seemed to be gaining, looked better, diarrhea was



Fig. 1. Case 1. Radiograph of colon showing lack of haustration, irritable colon, holding barium poorly.



less, temperature was coming down. A course of emetine and carbarsone was given on the one chance that it might be an amebic infection.

On January 7, 1937, patient was worse.

January 10 pain in toes very severe; question of arsenical neuritis (carbarsone) or question of neuritis, vitamin B. Sigmoidoscopic examination showed typical ulcerations of ulcerative colitis with free bleeding. Swabs were made from ulcer for culture. Streptococcus fecalis grown and autogenous vaccine was made.

January 14 patient allowed to go home for financial reasons.

January 19 patient became worse at home; anorexia, nausea, vomiting; from fifteen to twenty stools per day. Patient was dehydrated and her blood counts showed hemoglobin 70, R. B. C. 4,440,000. She reentered the hospital and for ten days was kept on medical management and vaccine with intravenous glucose and saline and acriflavine, Gr. 1, t. i. d. p. c. Patient went down hill rapidly.

On January 29, 1937, after transfusion and glucose, ileostomy was done under local anesthesia. Patient appeared to stand the operation well but death occurred that day from exhaustion and vasomotor collapse.

#### AUTOPSY FINDINGS

Autopsy was limited to the abdomen through enlargement of surgical wound. A small amount of straw colored fluid was present in the peritoneal cavity. Liver was enlarged, very pale; spleen normal size; nothing abnormal in stomach; kidneys grossly normal; small intestine normal.

Large intestine (fig. 2) was severed from terminal ileum to sigmoid. There were a few small ulcerations, about 1 cm. in diameter, in the terminal ileum and at the ileocecal valve. The whole colon was markedly involved in an ulcerative process, in which the ulcerations were very long and narrow and ran parallel to the long axis of the bowel. Between these extensive areas of ulceration strips of remaining mucosa were seen and these surviving bits of mucosa stood out above the ulcer so that they resembled small polyps, there being no proliferation of this mucosa to warrant its



Fig. 2. Case 1. Photograph of ulcerative colitis; specimen removed at autopsy.



Fig. 3. Case 2. Radiograph of colon showing irritable bowel.

being called a polyposis. The bases of the ulcers were right down on the submucosa and muscularis. There was some thickening and loss of elasticity.

Microscopic examination revealed inflammatory reaction about the ulcers with round cell infiltration extending well into submucosa and almost up to the muscularis. Section of liver showed a most complete absence of parenchymal cells and their replacement with fat.

Diagnosis: Acute ulcerative colitis with fatty degeneration of liver.

Case 2. F. B., white woman, aged 17, was seen in September, 1930; she lived in Chicago. Past history negative. She gave a history of diarrhea of one and a half years' standing, becoming worse after hemorrhoidectomy in 1929. She was having from eight to ten watery stools daily with mucus, some blood and at times pus. There was quite a marked loss in weight and strength. She was hospitalized on September 5, 1930.

The findings were a well compensated mitral insufficiency. The cecum and sigmoid were easily palpated through the tender abdominal wall and were tender and cord like. Free HCl was present in the gastric contents.

Roentgen ray examination showed a dilated second portion of the duodenum with considerable delay in emptying. The colon was irritable and spastic with involvement mainly in the descending colon and sigmoid. Plates (fig. 3) showed the barium scattered throughout the colon with narrowing of the descending colon and sigmoid and lack of haustrations.

The sigmoidoscopic examination revealed a very tight sphincter. There were innumerable ulcerations visible throughout the sigmoid and rectal pouch. The mucosa bled very readily and there was a whitish gray exudate present in many places. Examination for amebae was negative. The cultures revealed a *Bargen diplostreptococcus*. The hemoglobin was 65 per cent, the R. B. C. 3,000,000.

The patient was placed on routine rest in bed, high



Fig. 4. Case 3. Radiograph of colon showing irritable bowel. Density over right iliac region is a salol tablet.

caloric, high vitamin diet, with normal saline rectal irrigation. She was given a course of emetine as a therapeutic test for amebiasis with no improvement.

She seemed to improve on autogenous Bagen vaccine and was continued on this regime for some time.

A recent follow-up reports that she is not well. She has had continued periods of exacerbation and quiescence. Bagen vaccine was tried for two years and given up as of no value. Diet and bismuth control the diarrhea.

Case 3. J. L., white man, aged 37, was seen in May, 1931. He had bowel trouble for several months for which a hemorrhoidectomy had been done. He became worse, having from ten to twenty stools daily filled with blood and mucus.

Roentgen rays (fig. 4) showed an irritable colon throughout the entire length with a fair looking cecum.

Sigmoidoscopic examination revealed a granular, friable mucosa, bleeding easily, with small ulcerations six inches from anus. The instrument could not be inserted higher because of severe bowel spasm. Blood and mucus were present.

No amebae nor Bagen organisms were found; there were no tubercle bacilli and no dysentery organisms.

Calcium and parathormone, bowel irrigations and every form of medical treatment did no good. The patient grew progressively worse and lost tremendously in weight and strength.

On June 19, 1931, a cecostomy was done with relief of symptoms almost at once. By August 1 he was having normal bowel movements and begged for a closure of his cecostomy. On September 14, 1931, the cecostomy opening was closed. He did very well, having no symptoms.

A recent follow-up shows that he was feeling well up to 1935. He then had a recurrence with from ten to fifteen stools per day. He tried all kinds of therapy and was seen by many doctors. He lost 20 pounds. Treatment now with bismuth subnitrate by mouth with

grade "A" Saraka controls bowel movements to 2 per day.

Case 4. S. S., white female, aged 31, was seen on January 28, 1937, because of a flare-up of an ulcerative colitis. Her history dates back to 1933, with the usual symptomatology; namely, diarrhea, bloody stools, fever, anemia, etc.

Every few months she would have relapses during 1933 and 1934. Her last severe relapse was in 1934. A slight attack occurred in April, 1935, with from eight to ten stools per day; the attack lasted ten days. She had no trouble since April, 1935, until the present attack started on January 20, 1937, with bloody stools, but only two bowel movements per day.

Findings were tenderness in the right upper quadrant. Hemoglobin 78 (Sahli=13 grams); R. B. C. 4,710,000. No amebae, parasites, nor ova were found in her stools. Sigmoidoscopic examination revealed an irritable bowel with superficial bleeding ulcerations and friable mucosa 6 inches from anus. Ulcers were not undermined. Smears from ulcers showed no amebae. Cultures showed *Streptococcus fecalis*.

Roentgen rays (fig. 5) showed marbled appearance of transverse colon, a definite pseudopolyposis, an irritable, spastic colon, with lack of haustrations.

Autogenous vaccine of *Streptococcus fecalis* is being given with a nonroughage diet.

Case 5. J. K., white male, aged 32, lived in New York. Ulcerative colitis was found both on the sigmoidoscopic and roentgen ray examination. No amebae, no Bagen organisms found. Usual treatment seemed to do very little good. He moved to Miami, Florida, living an outdoor life. His diarrhea was controlled there. When he returns to New York he has definite recurrence of symptoms. He is not completely well.

#### IMPRESSIONS AND CONCLUSIONS

1. The salient features of idiopathic ulcerative colitis are reviewed.



Fig. 5. Case 4. Radiograph of colon showing marbled appearance of transverse colon due to pseudopolyposis late in ulcerative colitis.



2. In the etiological controversy, involving the *B. dysentery*, *B. coli*, and *Bargen diplostreptococci*, the weight of evidence seems to favor the *B. dysentery*. Is ulcerative colitis a sporadic form of dysentery?

3. Deficiency and allergic factors are coming to the fore.

4. The present treatment of ulcerative colitis leaves much to be desired.

5. It is difficult to speak of cures in ulcerative colitis; comparing it to tuberculosis we should use the term "arrested case."

6. Five cases are reported, one dead, four not well. One of the reported cases suggests deficiency factors and allergy, another deficiency factors alone.

7. Indications for surgery are pointed out.

1908 Wilshire Boulevard.

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#### DIAGNOSIS AND TREATMENT OF UNDULANT FEVER

Carl E. Ervin and Henry F. Hunt, Danville, Pa. (*Journal A. M. A.*, Dec. 11, 1937), limit their discussion of the diagnosis and treatment of undulant fever especially to the use of intravenous injection of killed typhoid and paratyphoid organisms in the treatment of disease. They report nine cases, in addition to the ten others already reported, which represent their experience with the use of mixed typhoid vaccine injected intravenously. They include one control case, in which this agent was not used. The course of acute and subacute Brucella infection was apparently shortened by this method of fever therapy. The mechanism of recovery is still a speculation. From the hemocytologic standpoint the most significant changes which occurred after the intravenous injections of killed typhoid and paratyphoid bacilli were found in the total leukocyte, the neutrophil, the metamyelocyte and the lymphocyte count.

## SPECIAL ARTICLE

## EARLY MISSOURI OPHTHALMOLOGISTS

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DR. JOHN GREEN, 1835-1913

Among Missouri ophthalmologists one man stands out preeminently because of the lasting impress he has made on American ophthalmology, Dr. John Green. His contribution has been that of raising the standard of ophthalmologists. His unyielding demand for excellence of training, constant advance and scrupulous conduct shaped not only his own life and that of his associates but, through his influence in the American Ophthalmological Society, that of American ophthalmologists as a whole.

Dr. Green's preliminary training was the best obtainable. He received the degrees of A.B., Sc.B., and M.D. from Harvard. Following the completion of his medical course in 1858 he studied for two years in London, Paris, Berlin and Vienna. Five years later, before coming to St. Louis in 1866 to establish himself in the practice of ophthalmology, he again went abroad for a year of study under Donders and Snellen and under Bowman.

From Bowman he acquired an interest in tear sac work; during his first years in St. Louis he wrote several papers on the treatment of lacrymal obstruction and invented soft lead styles for use in these cases. He also devised an operation for entropion. But it was in optics that he did his most important work. Inspired by his research with Donders and Snellen, he returned from Utrecht absorbed in the study of refraction. During the next few years he published a description of the test charts for astigmatism that bear his name, proposed improvements in test-letters, and designed stereoscopic diagrams for testing binocular vision.

In describing another physician Dr. Green once said: "Every year brought accession of wisdom and power; his growth was continuous and symmetrical to the end." This comment is applicable to his own progress. When he was past fifty he heard a paper on mathematical optics which, like others he had been reading in European journals, contained formulae difficult for him to comprehend. Determined to overcome this lack of training he sought the help of his friend, Dr. E. A. Engler, professor of mathematics at Washington University, and under his supervision devoted several nights a week for three years to the study of algebra, trigonometry, analytic geometry and calculus. It was at the conclusion of this course that he contributed to the *Transactions of the American Ophthalmological Society* a paper demonstrating the effects of obliquity of a lens upon the focusing of

any pencil of rays falling upon it. It was the ablest paper on mathematical optics which had appeared in the *Transactions*.

Along with his research and practice Dr. Green taught in the St. Louis Medical College (later the Medical Department of Washington University), where he held the chair of Ophthalmology. He also took promising young doctors into his own office for postgraduate instruction. To many, the memory of Dr. Green will always be linked with that of his two earliest pupils, Dr. M. H. Post and Dr. A. E. Ewing, both of whom afterward became associated with him in practice. Each of these men spent three years in his office, followed by two years of study abroad, before starting to practice. Through them Dr. Green expressed his ideas of proper training for ophthalmologists.

But it was not as a teacher that he exerted his greatest influence. Until 1896 there was only one national association of ophthalmologists, the American Ophthalmological Society. Naturally men in this field coveted membership in it and its requirements became important to them. For many years Dr. Green was chairman of the membership committee and it was largely due to him that the Society maintained the high standard demanded of its members. The high scale of the organization set the scale for ophthalmologists generally and indirectly raised the standards of all other specialties. Thus has Dr. Green's influence become limitless.

Some individuals felt that the requirements of the Society were too high. One year a prominent man was rejected by the committee because his name appeared in the city directory with the title of "oculist." When Dr. Green returned home from the meeting, he looked up his own name in the St. Louis directory and found it likewise followed by the same title. The next year the man who had been rejected was recommended for membership.

Very few things were as important to Dr. Green as the American Ophthalmological Society. He liked the scientific sessions, he attended them regularly, and it was in these that he read most of his papers. He also enjoyed the informal associations with its fellows: each year, when the meeting at New London was adjourned at noon, he would have a boat and skipper engaged to take a group of friends for an afternoon sail on the harbor and Long Island Sound. One likes to imagine that these were gay and jovial parties, where comrades called each other by first names and exchanged fishermen's tales that could not be backed up by facts.

Outside his own field Dr. Green was a scholar. As a rest from his professional work he delighted in reading Greek, especially Greek tragedy. Science other than that of medicine seems to have interested him for he belonged to the Academy of Science of St. Louis. From a highly appreciative biographical sketch of Agassiz which he read before that society one surmises that he admired that great scientist and probably possessed in common with him a love of nature.



Probably the outstanding trait in Dr. Green's forceful personality was his earnest sincerity. He did not hesitate to show his intolerance toward what he did not approve. As a medical student at Harvard he had been dissatisfied with the course of requirements. To show his disapproval, at the completion of his medical work in 1856 he refused the University's degree of M.D. Instead, by examination he was made a fellow of the Massachusetts Medical Society, which carried with it the license to practice. It was not until 1866 that he took his medical degree.

He did not like presumptuous people and was ready enough to humble those who overrated their own importance. A very elegant lady who had brought her daughter to him for consultation concerning some ocular trouble asked him in a supercilious manner:

"Doctor, can you tell what the trouble is with my daughter's eyes?"

"Yes, Madam," he answered, "your daughter has sore eyes."

He was also impatient with those who annoyed him with silly and unnecessary questions. A young college student went to Dr. Green because of an irritation of the eyes for which he wished to be fitted with glasses. After a careful examination Dr. Green advised him that spectacles were not indicated but that he would prescribe drops for use in the eyes.

"Doctor," said the young man, "are you sure I do not need spectacles?"

"Yes," answered Dr. Green.

"And you think I need nothing more than these drops? What if they do not cure my trouble?"

"Ask God," laconically replied Dr. Green.

As student, as teacher, as promoter of high professional standards, as a man, Dr. Green set a record which merits the emulation of ophthalmologists in the field today.

#### DR. CHARLES EUGENE MICHEL, 1832-1913

Dr. Charles Eugene Michel was a contemporary of Dr. John Green. Each of these two men, of almost the same age, came to St. Louis in 1866 at the close of the Civil War, and practiced there throughout his lifetime. Both were prominent ophthalmologists. Both died in the year 1913.

With this much in common, they shared little more. Dr. Green had come from a long line of Massachusetts ancestors; Dr. Michel from an old French family of Charleston. Dr. Green had received his medical training at Harvard; Dr. Michel at the Medical College of the State of South Carolina. Dr. Green had served in the U. S. Army; Dr. Michel in the Confederate Army. Perhaps their backgrounds explain the fact that they were not friends.

Dr. Michel was professor of ophthalmology in the Missouri Medical College and surgeon at the St. Louis Eye, Ear, Nose and Throat Infirmary. He was an unusually skillful surgeon and it was as

such that he became prominent and built up one of the largest practices in the Middle West. A great artist makes his work appear simple. So Dr. Michel's cataract extractions, never hurried yet never faltering, seemed to be finished with ease almost before the observer knew it. In plastic work he was able to devise new procedures to meet the individual requirements of each case. Yet he wrote very little and consequently has been given credit for few of his inventions. An exception was his published account of the use of electrolysis for the removal of lashes in trichiasis. He was probably the first to modify Desmarres' transplantation operation for pterygium by burying it in a conjunctival pocket below. This was later independently described by Dr. McReynolds to whom credit is justly due.

Dr. Michel had great charm; he liked people and in turn was loved by them. In making inquiries of patients and of doctors who knew him well it is impossible to get an unbiased statement. They all seem to feel in common with Dr. Thomas Shastid: "A thousand skillful oculists may come and go, but none will ever exactly fill the place which he (Dr. Michel) left vacant."

#### DR. ADOLPH ALT, 1851-1920

Dr. Adolph Alt made a name for himself as editor of the *American Journal of Ophthalmology* and as an ophthalmic pathologist.

Born in Germany, educated at Heidelberg, he came to America in 1875 to be assistant to Dr. Herman Knapp. After four years in New York and one in Toronto he came to St. Louis where he spent the remainder of his life.

No native son has been more loyal to the Middle West than Dr. Alt. In 1884 when he started the *American Journal of Ophthalmology* the East laughed at the thought of an ophthalmological journal being published in the West. He made it the successful journal it became, however, and remained its editor thirty-four years.

Though he was a member of the American Ophthalmological Society his interests were more with that society of the West, the Western Ophthalmologic and Otolaryngologic Association which he helped organize in 1896 and of which he was president for its first two years. For the first seven years of its existence Dr. Alt published the ophthalmic papers of this society in the *American Journal of Ophthalmology* and had them reprinted for an annual volume of transactions. He discontinued this only when the Association was reorganized in 1903 as the American Academy of Ophthalmology and Otolaryngology and began to publish its own transactions.

Dr. Alt's papers were mostly on the subject of pathology.

#### DR. B. E. FRYER, 1837-1911

Though I have talked to no one who knew Dr. B. E. Fryer I am sure that he was a scholar and a

doctor who kept abreast of the times. This is apparent from one of his earliest papers "Recent Advances in Ophthalmology" read before the Kansas State Medical Society in Atchison in 1882.

Dr. Fryer's reviews were excellent and, in my opinion, were his greatest contribution to medicine. Most of his work in this line was done for *The Quarterly Journal of Ophthalmology* in which he had charge of the Department of French Literature for eight years. His other literary contributions were for the most part case reports.

He was born in Bath, England, in 1837, the son of an English Army officer. At the age of seven he was brought to this country by his mother, then a widow, and was educated in Philadelphia. He received his medical degree at the University of Pennsylvania and two years later entered the service of the United States Army. I find no record of the year he came to Fort Leavenworth but he was stationed there in 1878 when he published his first paper. He remained at Fort Leavenworth until 1887 when he was retired from the Army and moved to Kansas City to enter private practice.

Dr. Fryer was Professor of Ophthalmology and Otology in the Kansas City Medical College, the University Medical College, the Medical Chirurgical College, the Medical Department of the University of Kansas, and the Kansas City Postgraduate Medical College successively.

In 1883 at the age of forty-six he became a member of the American Ophthalmological Society. He was a charter member of the Western Ophthalmologic and Otolaryngologic Association and its second president in 1898 succeeding Dr. Alt.

#### DR. FLAVEL B. TIFFANY, 1846-1918

Dr. Flavel B. Tiffany practiced ophthalmology in Kansas City from 1878 to 1918. Previous to going there he had received his medical degree from the University of Michigan, had done general practice for a time and had spent two years in postgraduate work in London, Vienna and Paris.

Dr. Tiffany's main characteristic seems to have been enthusiasm which he put into everything he did: into his medical work as organizer, writer and clinician; and into his recreation as well. Even when he became older his enthusiasm was still that of youth so that he appeared younger than his years and in turn enjoyed the companionship of younger men. He often stated that he liked to be associated with young people because it kept him young.

His ardor and ability to imbue others with this quality made him an able organizer. He was one of the promoters and charter members of the Jackson County Medical Society; and he helped found the Kansas City University Medical College in which school he held the chair of ophthalmology until the school closed about 1903.

Few authors of his time contributed more articles to medical literature than did Dr. Tiffany. Beginning to write in 1884, he published five papers that year. From that time he maintained a steady out-

put of papers on ophthalmology, most of which were published in the *Journal of the American Medical Association*, the *Kansas City Medical Record* and the *Kansas City Medical Index*. His interests were apparently distributed over the entire field of ophthalmology, for he wrote on many diverse subjects among which were, "Damaging Results From the Use of Cocaine," "Sympathetic Ophthalmia," "Affections of the Conjunctiva," "Electro-Cautery in Diseases of the Cornea," "Quinine Amaurosis," "Cataract," "Dynamics of the Extrinsic Ocular Muscles," "Primary Acute Glaucoma," and "Plastic Surgery in Ophthalmology." He also published a book, "Anomalies of Refraction and Diseases of the Eye."

He worked zealously at building up and maintaining a large practice and at improving his fitness for this work. To be a good ophthalmologist was not enough; he demanded of himself that he become better. Though not naturally an ambidextrous surgeon he made himself so by using his left hand for almost everything he did. Even at the age of sixty-five, in bowling, which was his favorite exercise, he used only his left hand in order to increase his ambidexterity.

A biographer of Dr. Tiffany tells us that as a young student Dr. Tiffany was very poor and obliged to work his way through school. As a result of the hard work and privations he suffered a physical breakdown while a student at the University of Minnesota and was unable to finish his literary course. It is not surprising that the man who had been that poor boy enjoyed with zest the luxuries that his successful practice made possible.

He was especially fond of travel. He went abroad sixteen times and around the world twice. He like Europe so much that, as far as he was able, he brought Europe to Kansas City. His office on McGee Street was a small unique structure copied from a building in Paris occupied by an ophthalmologist. His office, like his home, was filled with beautiful paintings brought from abroad. Almost every noon when Dr. Tiffany went out for lunch he ordered roast beef and mashed potatoes, because he was an American, and—a glass of wine, because his heart was partly French.

On each of his trips abroad he kept an elaborate diary which he later published in the form of small books to be sent to his friends at Christmas time.

Dr. Tiffany's life was full because he lived it with enthusiasm.

513 Holland Building.

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The writer is indebted to Dr. Edward Jackson for much of the valuable information on Dr. Green. The last two anecdotes were related by Dr. Joseph W. Love.

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### CHRONIC CONSTRICTIVE PERICARDITIS: PHYSIOLOGIC AND PATHOLOGIC CONSIDERATIONS

Twenty-one patients with an undoubted diagnosis of constrictive pericarditis have been observed by C. S. Burwell, Boston, and Alfred Blalock, Nashville, Tenn. (Journal A. M. A., Jan. 22, 1938). Patients with constrictive pericarditis present a recognizable picture. The most common complaints are dyspnea on exertion, swelling of the abdomen, weakness, cough, edema of the feet and ankles and discomfort in the upper part of the abdomen. Pulmonary edema is rare, while pleural effusion is frequently encountered. Unlike most conditions caused by heart failure, these signs may remain unchanged for months or years. In an attempt to define the alterations in the circulation, the following phenomena have been studied: the pressure in the veins, the pressure in the arteries, the heart rate, the movements of the heart, the velocity of the blood flow, the total blood volume and the output of the heart. The signs have many similarities to those encountered in heart failure, but there are certain striking differences. High venous pressure and the reduced cardiac output appear to be the most important dynamic consequences of constrictive pericarditis. The manifestations of constrictive pericarditis include changes in venous pressure which are similar to those in congestive heart failure and changes in cardiac output and arterial pressure which are somewhat similar to those observed in patients with circulatory collapse. Successful operation is followed by changes in the measurements of the circulatory functions toward the normal. The procedure which appears to be common to successful operations is the removal of a considerable area of thickened tight pericardium from the ventricles. This suggests that these patients suffer from an inability of the ventricle to dilate adequately. While it appears that this inability of the heart to dilate during diastole is responsible for most of the signs and symptoms in constrictive pericarditis, it seems doubtful in many instances that the heart could expel the normal quantity of blood at each contraction, even if it could receive it. Similar changes in the circulation may be brought about by certain acute conditions, especially those which lead to the accumulation of fluid in the pericardial cavity. Tricuspid stenosis is another disorder in which an impediment to the entry of blood into the heart is to be expected. Some patients exhibit tricuspid obstruction and myocardial failure simultaneously, and in these patients treatment of the myocardial failure by the usual methods may result in a reduction of venous pressure, although the pressure will not return to the normal level. Patients with severe constrictive pericarditis commonly show a marked increase in venous pressure and a marked decrease in the cardiac output. The elevation of the venous pressure and the decrease in cardiac output do not, however, bear a simple relationship to one another, because the elevation of the venous pressure presumably increases the diastolic

filling of the heart and thus tends to maintain or elevate the cardiac output per beat. Conversely, there is some evidence that lowering of the venous pressure (e. g., by diuresis or phlebotomy) may reduce the cardiac output. In a consideration of the relationship of the pathologic lesion to physiology, the question as to the portion of the scar which it is most important to remove is of interest. The authors have made no attempt to remove the scar tissue from about the vena cava, and improvement has resulted in most of their cases. Observations seem to indicate that there is really a limitation of the ability of the heart to dilate rather than an obstruction about the great veins. Most of the signs and symptoms are attributable to back pressure from the right side of the heart, and it would seem that it is most important to decorticate the right ventricle. The right and left ventricles should be decorticated as thoroughly as seems feasible, and it is quite dangerous and probably unnecessary to attempt to remove the scar from the auricles. The coronary vessels may become intimately attached to the scar. This may play some part in the production of atrophy of the heart muscle, which is frequently observed. The atrophy is probably due also to partial disuse. It is certainly of importance from a surgical point of view, for a coronary artery may be included with the scar tissue that is removed unless great caution is exercised. The etiologic agent which is responsible for the pericarditis may, in some instances, invade the myocardium. While an extension of a tuberculous process from the pericardium to the myocardium, which is in immediate proximity to it, is often encountered, isolated myocardial tuberculosis is a rare observation. Constrictive pericarditis may result from various infectious processes. A tuberculous infection was responsible for the constrictive pericarditis in most of the authors' patients, and an infection with staphylococcus aureus ranked second. The tubercle bacillus and the staphylococcus, particularly the former, would be expected to produce the disease most often, as they cause a chronic proliferative type of disease. The mortality rate for patients with tuberculous pericarditis is quite high, particularly if the disappearance of fluid is followed by an active proliferative process. For this reason pericardiectomy should not be too long delayed. It is often successful when tuberculous activity is present in the pericardial scar. When a tuberculous pericardial effusion disappears but the evidences of obstruction continue and the patient's condition becomes worse, operation should be considered.

### IRRADIATION AS AN AID TO SURGICAL TREATMENT OF CANCER OF THE BREAST

Radical meticulous operation is definitely indicated for all operable cancers of the breast. It requires a careful following of the teachings of Halstead and Handley. Postoperative radiation therapy should be of advantage in preventing or restraining recurrence in the operative field. Preoperative irradiation treats the lesions in the operative field. It may therefore be of greater help than postoperative therapy in preventing or restraining local recurrence. Postoperative therapy has so far not increased the five year postoperative expectation of freedom from disease. In the opinion of William Crawford White, New York (Journal A. M. A., Jan. 22, 1938), the failure before 1931 to show improvement with postoperative irradiation was largely due to the concentration of therapy on the operative field without due regard to the usual spread of the disease beyond the breast into the chest, the intercostal lymph channels, the vertebrae and the other breast. The 30 to 40 per cent failure in the treatment of so-called favorable localized tumor of the breast is due to these metastases, not to the lack of thoroughness in radical operation.

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FEBRUARY, 1938

## EDITORIALS

### SOCIALIZED MEDICINE

Socialized medicine ran against a stumbling block recently, principally at the hand of a Missouri member of the United States Congress, Honorable John J. Cochran, St. Louis. The progress already made was not destroyed but furtherance of the socialized medical plan was forestalled.

Sickness insurance was established for the employees in Washington, D. C., of the Federal Home Loan Bank Board and other agencies which come under the direction of the board such as the Home Owners' Loan Corporation. A fully equipped clinic was established in Washington, D. C., under the direction of Dr. Henry R. Brown, Chief of the Tuberculosis Division of the Veterans' Administration. Several physicians and a supplementary staff are employed.

Members who do not wish to be attended by clinic physicians may have the physician of their own choice. The service includes complete physical examinations and necessary medical and surgical care with the exception of brain and nervous system surgery; also any additional treatment after a physician has recommended confinement in a mental, tuberculosis, drug or alcohol addiction institution is excluded. Hospitalization is included. Members must pay for medicines, drugs, surgical or orthopedic appliances, blood transfusions and special nursing. Men with families receive this service for themselves and families for \$3.30 a month; single persons for \$2.20. While the plan is limited at present to employees of the Federal Home Loan Bank Board which numbers approximately 2000 the charter of the "Group Health Association" is not restricted but could be extended to the 115,912 federal employees and approximately 240,000 dependents in Washington and the 700,000 or more employees and approximately 2,500,000 dependents throughout the country.

The Federal Home Loan Bank Board is one of the sundry independent executive agencies of the Government which will draw its income from the Independent Offices Appropriations Bill (H. R. 8837). Congressman Cochran attacked the estab-

lishment of the Group Health Association before the House of Representatives and at a hearing of the Subcommittee of the Committee on Appropriations of the House of Representatives the Federal Home Loan Bank Board was called upon to prove that the establishing of the Group Health Association was within its province. When the Independent Offices Appropriations Bill was passed it carried an amendment which will prohibit any of the Government agencies from allocating for group health associations any funds appropriated by Congress.

In speaking before the House of Representatives Congressman Cochran said: "The medical profession and the dental profession throughout the United States have been greatly exercised over the group health associations that are springing up in the Government service. Personally I do not believe there was any authority of law whatever for the spending for this purpose \$40,000 by the Home Owners' Loan Corporation. It is certainly going very far to spend money in that way. It seems to me the Corporation officials should not have taken this responsibility but should have come to the Congress and specifically asked for authority to do so. Does the gentleman feel the authority to spend money for group health associations is in the law? . . . If we do not put some limitation upon them then one after another of the independent agencies might do the same thing. The physicians, surgeons and dentists of this country are taxpayers. It seems to me we should protect them and not spend the taxpayers' money to form such associations thus taking bread and butter away from the medical profession. We cannot control the employees, I know. They can go out and form any kind of a group that they want to form, but so far as taking money that we appropriate for specific purposes for such a thing, and for heads of departments to turn that money over to employees' associations to further group health associations or anything of that kind, I say is wrong, and until the Congress specifically provides by law for it, they should not be permitted to do it."

What appeared to be a definite step toward regimentation of physicians was thus arrested.

### THE IRON REQUIREMENT

The recent suggestion<sup>1</sup> that iron absorption from the intestinal tract is a phenomenon dependent upon the pressure gradient existing between the concentration of iron in the intestinal tract and the concentration of iron in the blood stream once more focuses attention upon the food requirement of this metal; it is known to be important to the production of hemoglobin and to the maintenance of the functional integrity of skin and nails. According to this theory no iron is excreted by the large bowel, as is popularly assumed, but that found

1. McCance, R. A., and Widdowson, E. M.: *Lancet* 2:680, 1937.



in the stool is the residue left over unabsorbed during the passage of food iron through the gut. Such a concept redirects attention upon the dietary intake of this important nutrient.

Within the last few years the relative impotence of iron in organic combination, as it is largely found in foodstuffs, has been recognized. Even spinach is now known to be of less potential value in meeting the iron requirements of the body than has been generally assumed. In general, less than half of the iron contained in ingested food is capable of utilization by the body. Perhaps it is true that a considerable excess of this substance must be ingested in order that the necessary pressure gradient be maintained between the concentration of iron in the gut and that in the blood.

Exact experiments<sup>2</sup> have demonstrated that only about one third of the iron ingested by a group of anemic women was absorbed into the body and that of the total intake less than 2 per cent was converted into hemoglobin. Perhaps in these experiments a considerable excess of the ingested metal went to restore depleted iron reserves, since at least a third of the total iron content of the human body is in the form of "storage iron," available for synthesis by the cells under the influence of the proper exciting agent.

In the adult male it is altogether probable that little or no exogenous iron is required to meet the metabolic demands of the organism, so jealously iron conserved. Nevertheless it is equally probable that the iron content of the diet must be kept at an optimal level lest deficiency in some manner as yet unexplainable, occur. In growing children there is a considerable amount of iron required to meet the demands for growth and for the production of new hemoglobin to meet the needs of expanding body tissues. In women who suffer a very considerable iron loss at each catamenia and who contribute relatively tremendous quantities of iron to each fetus which they carry, it is more likely that the diet will not contribute an adequate amount of the metal in a form utilizable by the body. Indeed, analyses<sup>3</sup> of food for iron have indicated that only half of twelve standard dietaries contain optimum amounts of this important substance.

Such theoretical considerations and laboratory investigations are consistent with the well recognized clinical fact that while anemia is common in growing children and in women it is relatively uncommon in adult men. The importance of paying more attention to the diet of, particularly, the well patient is apparent. The diet must be planned so that an excess of iron will be supplied although in the face of a manifest anemia it cannot be expected that the disease will be cured by diet alone. The administration of appropriate medicinal agents is

essential to the relief of the anemia. But attention to the diet of persons presenting themselves only for routine physical examinations may go far toward the prevention of iron deficiency.

From time to time we have had occasion to draw attention to the importance of an optimal dietary in order to maintain the well being of the individual. The value of diet as an aid to the prevention of disease must be readily apparent since it supplies those nutrients essential to the functioning of the organism and without which manifestations of deficiency are bound to arise. Although 15 milligrams is generally accepted as the proper daily intake of the metal in occasional carefully controlled experiments it has been possible to maintain iron balance on considerably less. In the present instance it is to be noted that egg yolk, beans and peas, whole wheat and oatmeal are appreciably richer in utilizable iron than are spinach, lean beef and prunes. Even though it is impossible at the present moment to trace the path followed by iron in its passage through the body or to state categorically the iron requirement of the individual good dietary practice demands the inclusion of adequate amounts of these foodstuffs in the diet.

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#### PATHOGENIC GERMS AND THE TELEPHONE TRANSMITTER

From time to time advertisements designed to intensify inherent fears appear in the press and are broadcast over the radio. Some of them have been concerned with the possibility of disease transmission through contact with germs supposedly lurking in wait for the unwary on telephone instruments and other articles of common usage. There have even been attempts to secure passage of legislation looking toward the compulsory sterilization of the telephone apparatus after each use.

Recently investigations carried out by research assistants under the direction of Dr. E. O. Jordan, Professor of Bacteriology at the University of Chicago, and Dr. Haven Emerson, Professor of Public Health Practice at Columbia University, have shown that there is no greater danger of disease inherent to the employment of the telephone than there is to the handling of any of the numerous objects of common usage (banisters, coins, street car straps, etc.) with which the individual comes into intimate contact each day. This danger is practically nonexistent.

In both Chicago and New York numerous bacteriologic studies of the germs on the transmitter, the receiver, the body of the receiver and on the door handle of several hundred public telephone stations demonstrated that the telephone is not a source of contagion. Indeed, attempts to implant diphtheria germs on the mouthpiece of the instrument by a known diphtheria carrier were wholly

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2. Fowler, W. M., and Barer, A. P.: *Arch. Int. Med.* **59**:561, 1937.

3. Hodges, M. A., and Peterson, W. H.: *J. Am. Diet. Assn.* **7**:6, 1931.

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unsuccessful. Nearly 90 per cent of the saprophytes recovered from the mouthpiece were proved to die within fifteen minutes of the time they were first deposited. In rare instances pneumococci and streptococci were recovered but it was shown to be virtually impossible for the subsequent user of the telephone to draw them into his respiratory passages. As a matter of fact, the receiver which comes into contact with the ear has more germs, probably rubbed off the skin, than does the transmitter.

Only usual good hygiene practice which demands that the hands be kept clean, that exposed surfaces such as hand rails and door knobs be wiped down, is required to insure freedom of contagion from employment of the telephone. Once again, a fear which might prove profitable to certain unscrupulous advertisers as long as it proves emotionally disturbing to a section of the populace is laid at rest by unimpeachable scientific investigation.

#### MISSOURI-KANSAS NEUROPSYCHIATRIC ASSOCIATION

The Missouri-Kansas Neuropsychiatric Association will hold its annual winter program in Kansas City, Mo., on February 15 with the day session at the Neurological Hospital and the evening program at the Jackson County Medical Society Auditorium at the Kansas City General Hospital.

The morning program, beginning at 10 o'clock, will consist of demonstrations and discussions of insulin shock treatments and demonstration of metrazol treatments by the staff of the Neurological Hospital. Luncheon will be served at the hospital. The afternoon program will start at 2 o'clock and will consist of didactic lectures and clinical demonstrations by visiting physicians who are members of the association. At 4 o'clock a formal program of guest speakers will be presented consisting of the following: Dr. Mabel G. Masten, Associate Professor of Neuropsychiatry, University of Wisconsin, Madison, Wisconsin, "Polyneuritis: A Metabolic Disorder"; Dr. A. E. Bennett, Omaha, Nebraska, "Experiences With Convulsive Shock Therapy in Depressive Psychoses"; Dr. Edward G. Billings, Director of the Department of Liaison Psychiatry, Colorado General Hospital, Denver, Colorado, "The General Principles of Treatment in Psychiatry."

Dinner will be served at the hospital following which the association will meet in conjunction with the neighboring county medical societies and Dr. Walter Freeman, Professor of Neurology, George Washington University, Washington, D. C., will speak on "Experiments in Prefrontal Lobotomy in the Treatment of Mental Disorders."

Modern physiotherapy equipment will be demonstrated by manufacturers during the day.

The association feels that this program will be of great interest to every physician and invites all physicians to attend the meeting.

#### NEWS NOTES

County Medical Societies who have lost or have never received charters may obtain a charter from the Headquarters Office if the secretary will make such a request.

Dr. E. Lee Dorsett, St. Louis, was a guest of the St. Clair (Illinois) County Medical Society at Belleville, Illinois, on January 5 and spoke on "Breech Extractions."

Dr. G. D. Royston, St. Louis, was a guest of the Hancock County (Illinois) Medical Society at Carthage, Illinois, on January 10 and spoke on "Management of the Puerperium and Its Complications."

Dr. O. S. Krebs, St. Louis, was a guest of the Union County (Illinois) Medical Society at Anna, Illinois, on January 13 and addressed the society on "Vomiting of Pregnancy and Chronic Nephritis of Pregnancy."

Dr. August A. Werner, St. Louis, was a guest of the Sioux Valley Medical Association at Sioux Falls, South Dakota, on January 18 and spoke on "The Relationship of the Anterior Pituitary and Gonad Hormones in the Female."

The life of Dr. Oliver Wendell Holmes, scientist, physician, poet and humorist, will be broadcast by *Cavalcade of America* on February 9, 7 to 7:30 p. m. Central standard time, over the national network of the Columbia Broadcasting System.

The Trudeau Club of St. Louis met on January 6 with the following members of the staff of the Desloge Hospital Chest Service furnishing the program: Drs. H. I. Spector, J. L. Mudd, L. G. McCutchen, Sigmund S. Tashma and F. G. Gillick, St. Louis.

The first issue of the *Medical Alumni Quarterly* of Washington University School of Medicine was recently distributed. Dr. Robert J. Terry, St. Louis, is editor of the publication. The first issue includes historical, scientific and administrative information and news of the school and its personnel.

There are a few vacancies for medical service with the CCC in the Seventh Corps Area military district. Either reserve officers or civilian physicians are eligible for this service the latter by contract with the Surgeon. Anyone interested should address the Surgeon, Seventh Corps Area, Federal Building, Omaha, Nebraska.



Dr. Frederick A. Jostes, St. Louis, spoke before the American Academy of Orthopedic Surgeons at Los Angeles on January 19. He talked on "Treatment of Backache in the Lower Back."

The Bransford Lewis Urological Club of Phoenix, Arizona, organized last spring and named for Dr. Bransford Lewis, St. Louis, who is a winter visitor in Phoenix, held a dinner and scientific meeting in Phoenix on December 21.

Drs. W. L. McBride and V. H. Bergmann, Kansas City, were guests of the Central Kansas Medical Society at Hays, Kansas, on December 16. Dr. McBride spoke on "The Common Sense View and Treatment of Syphilis and Methods of Control" and Dr. Bergmann discussed "Common Dysfunctions of the Ovary in Endocrinology."

Dr. T. S. Lapp, Fulton, reports on the Tumor Clinic at the Fulton State Hospital for December as follows: New patients admitted, 14; visits to clinic, 40; radium treatments, 19; cautery excision of carcinoma, 2; major operations, 1, and biopsies, 6. The following counties sent new patients: Boone, Callaway, Greene, Lawrence, Linn, Miller, Monroe, Moniteau, Pettis, Ralls and Schuyler.

The Missouri Social Hygiene Association elected the following St. Louis physicians to offices in the association at a meeting on January 10: Richard S. Weiss, president; Martin F. Engman, honorary vice president; Paul J. Zentay, first vice president; F. H. Ewerhardt, second vice president; A. H. Conrad, secretary-treasurer; Katharine Bain, G. O. Broun, B. F. May and Llewellyn Sale, members of the board of directors. Dr. Harriet S. Cory is executive secretary.

District health units have been established in seven communities and two more will be added in February according to Dr. Harry F. Parker, State Health Commissioner. Eleven units are planned. The units are to provide facilities for health promotion and disease prevention work including immunization against disease, control of syphilis, elimination of hazards of filth-borne disease, demonstrations in school health work, maternal and child health and general improvement of conditions under which people live. The work will not be medical relief and will not replace county health work. The program is financed by a state appropriation and a grant under the Social Security Act. The units now in operation have headquarters at Charleston, Dexter, Kennett, Poplar Bluff, Salem, Ozark and Osceola. St. Louis County, Marion, Miller, Jackson and Cass counties are participating as units in the state program.

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Mallinckrodt Chemical Works

Hippuran, 100 Gm. bottle

Hippuran, 500 Gm. bottle

Sharp & Dohme

Rabies Vaccine (Phenol Killed) (Semple) 14 dose package, with syringe

John Wyeth & Brother, Inc.

Vaginal Suppositories Silver Picrate—Wyeth's, 1 grain (infant size)

The American Physicians' Art Association, a national organization of medical men who have ability in the fine arts, will hold its first national exhibition in the San Francisco Museum of Art, San Francisco, California, in June, 1938. Entries will be accepted (after jury selection) in oils, watercolors, sculpture, photography, pastels, etchings, crayon and pen-and-ink drawings, wood carvings and book binding. Scientific medical art work will not be accepted. All entries close on April 1. Any physician interested should communicate with the secretary of the American Physicians' Art Association, 521 Flood Building, San Francisco.

The annual Medico-Military Symposium sponsored by the Kansas City Southwest Clinical Society will be held at the Kansas City General Hospital, Kansas City, March 28 and 29. This meeting is devoted to medical subjects which are also of military interest and, while it is primarily for medical Reserve Officers, the entire profession is invited to attend. Since military surgery is industrial surgery, traumatic surgery is general surgery and military medicine is general medicine every physician will find something of interest on the program. Reserve Officers will obtain information which will be of value in event of war and much that will be of value in his practice and will receive credits which will apply on his advancement. The Kansas City Southwest Clinical Society invites every doctor of the Southwest to attend this meeting.

The second observance of National Social Hygiene Day has been set for February 2, 1938, by the American Social Hygiene Association. This plan of designating one day was planned to mark a high point in the year round effort to gain popular interest and support for the activities of the health authorities and the medical profession in dealing with syphilis and gonorrhea. The first National Social Hygiene Day, February 3, 1937, was marked by hundreds of meetings held throughout the country. More than a thousand newspaper clippings from all parts of the country testified to its suc-

cess. "Stamp Out Syphilis—Enemy of Youth" is the slogan for this year. Particular emphasis will be placed on the control of syphilis among the 20 to 30 age group in which more than half of all new infections occur.

To secure wider distribution of its book, *Eye Hazards in Industrial Occupations*, by Louis Resnick and Lewis H. Carris, the National Society for the Prevention of Blindness, 50 West Fiftieth Street, New York City, is offering copies at 50 cents each. This book, which sold formerly for \$1.50, was published in 1924. Although some of the photographs show safety devices which have since been improved upon, the contents remain a valuable guide to safe practices in industry. It is a handbook for safety engineers, safety inspectors, safety committeemen, industrial physicians and nurses; for those responsible for industrial operations and those who share the responsibilities and opportunities for conserving the life, health and sight of the millions of men, women and children employed in industry.

The American Association of Obstetricians, Gynecologists and Abdominal Surgeons is offering an annual award of \$500 for the best thesis submitted. Contestants must be physicians in practice or teaching, or interns, residents or graduate students in the fields of obstetrics, gynecology or abdominal surgery. Manuscripts for any year must be in the hands of the secretary, Dr. James R. Bloss, 418 Eleventh Street, Huntington, West Virginia, before June 1 of that year. They must be submitted under an alias and be accompanied by a sealed envelope bearing the alias on the outside and containing a card with the contestant's name and address. The manuscript must be limited to 5000 words and typewritten in double space. The successful thesis will be the property of the association but the author may have it published in the journal of his choice. Unsuccessful contributions will be returned to their authors. The award will be made at the annual meeting of the association at which the successful contestant must appear to present his contribution as a part of the regular scientific program. The president of the association will appoint annually a committee on award which will determine the successful contestant.

## OBITUARY

JAMES F. JARVIS, M.D.

Dr. James F. Jarvis, Sweet Springs, a graduate of the University of Louisville School of Medicine, 1879, and the Jefferson Medical College of Philadelphia, 1891, died at his home of pernicious anemia and cerebral thrombosis on November 8, 1937, aged 81 years.

Dr. Jarvis was born at Simpsonville, Kentucky, and

moved with his family to Monroe County, Missouri, when he was 13. He attended school at Ann Arbor, Michigan, before beginning his medical training. After receiving his medical degree from the University of Louisville School of Medicine he began his practice at Saline City, Saline County. After practicing for ten years he attended the Jefferson Medical College of Philadelphia and in 1891 located in Sweet Springs where he remained in practice until ill health prevented. Through his many years of practice he had endeared himself as a fine physician and a useful citizen to a wide circle of friends and patients. He was active in the Christian Church and for twenty-one years served as a member and for several years as president of the school board. He was an honor member of the Saline County Medical Society and the Missouri State Medical Association.

He is survived by his widow, Mrs. Emma Armstead Jarvis, one son, a physician, Dr. James Armstead Jarvis, and three brothers.

THEODORE A. COFFELT, M.D.

Dr. Theodore A. Coffelt, Powersite, a graduate of the Missouri Medical College, St. Louis, 1886, died at his home after a long illness on September 5, 1937, aged 82 years.

Dr. Coffelt was born in McDonald County, Missouri. After obtaining his medical degree he practiced in Benton County, Arkansas, and in Carthage and Springfield. He moved to Powersite in 1929 and continued his practice there until his health failed.

He became a member of organized medicine early in his practice. He had served in the Greene County Medical Society for many years and in 1929 was transferred to the Taney County Medical Society of which he was president for several years. He was elected an honor member in 1932.

Surviving are his widow, Mrs. Harriet Clayton Coffelt, three sons and two daughters.

OWEN W. COCHRAN, M.D.

Dr. Owen W. Cochran, Boonville, a graduate of the Louisville Medical College, Louisville, Kentucky, 1885, died at his home of a heart attack on September 29, 1937, aged 77 years.

Dr. Cochran was born south of Columbia and attended the public schools in Boone County and the University of Missouri.

After completing his medical studies he returned to Boone County in ill health. He spent some time driving through that part of the country where the Lake of the Ozarks is now located selling a medical book to physicians and pharmacists. After his health was restored he returned to Boone County and began his practice. He extended his practice into Cooper County and soon established his residence at Big Lick. He later went to Boonville where he remained in practice until a few days before his death.

In 1926 he was elected probate judge and was in his third term at the time of his death. He was active in his church, was a member of the Masonic Lodge and the Odd Fellows Lodge.

Dr. Cochran served the Cooper County Medical Society as vice president in 1920 and as delegate to several Annual Sessions.

He is survived by two daughters, a son and several grandchildren.

CHARLES E. F. STREUTKER, M.D.

Dr. Charles E. F. Streutker, St. Louis, was born in St. Louis on June 25, 1873, the son of George and Johanna (Hunicke) Streutker. After a primary edu-



cation in private and public schools, he entered Walther College from which he graduated in 1892. He became a druggist's apprentice, studying at the St. Louis College of Pharmacy which institution conferred the degree of Ph.G. on him in 1892. Thereafter he studied medicine at the Missouri Medical College (now Washington University) and received his M.D. in 1895.

He entered general practice in South St. Louis and became associated with the late Dr. Frederick Schade, who had a large following. Upon the death of his friend and chief he succeeded to a large practice, mainly among the German populace of that part of the city. He was a great traveler, took long vacations, visited many far regions and took up postgraduate study at Vienna, Austria. Mountain climbing and exploring inland streams were his favorite pastimes. Only after he had discovered and acquired a beautiful site in Maries County, Missouri, on a bluff overlooking the tortuous Gasconade River did he cease his touring habits. This estate, which in time grew to contain over 800 acres, was called Shoal Creek Ranch. There he spent about four months during each summer and many week ends at all seasons, supervising the construction of improvements. Finally he had a country home in a virtual wilderness with every modern living comfort.

For many years Dr. Streutker was physician to the Home of Aged and Infirm Israelites and examiner for the State Mutual Life Insurance Company of Massachusetts. At the time of his death he was a member of the medical staff of Alexian Brothers Hospital.

On December 19, 1914, Dr. Streutker was married to Miss Bertha Belz, who survives him, as does his aged mother and two sisters. Our deepest sympathy in their great bereavement is hereby extended to them. While they feel the loss of a dear relative, the Missouri State Medical Association is keenly aware that it has lost a loyal and highly respected member.

Six of the thirty remaining Missouri Medics of 1895 officiated as pallbearers at Dr. Streutker's funeral. They were Drs. John Zahorsky, M. George Gorin, A. T. Quinn and Robert E. Schlueter, St. Louis; Dr. C. G. Ahlbrandt, Kirkwood, and Dr. Henry G. Horstman, Murphysboro, Ill. Dr. Robert J. Terry was prevented from serving by illness. The remains were laid to rest at the New St. Marcus Cemetery on Saturday, January 1, 1938.

R. E. S.

#### ELIJAH Y. PARE, M.D.

Dr. E. Y. Pare, Leeton, a graduate of Marion-Sims College of Medicine, 1898, died at his home on October 29, 1937, aged 65 years. He had been in ill health for several months.

Dr. Pare was born near Urbana, Missouri. He received his preliminary education at Marionville College, Marionville. Following his medical training he served as intern at the Nevada State Hospital.

He began his practice in Leeton in 1904 and remained in active practice there until the time of his illness. He served in the medical corps during the World War and was a member of the American Legion. He was a thirty-second degree Mason.

He became a member of the Johnson County Medical Society early in his career and had served in various capacities. He served as vice president of the Missouri State Medical Association in 1936.

The Johnson County Medical Society passed the following resolutions on his death:

WHEREAS, It has pleased the Great Physician of the Universe to remove from our midst Dr. Elijah Y. Pare, be it

Resolved, That in his demise this Society has lost one of its most valuable and honored members, and the community in which he lived and practiced medicine a progressive citizen and a beloved physician, and be it further

Resolved, That in his demise this Society has lost one of its his many friends and his bereaved family, and direct that a

copy of these resolutions be spread upon the records of this Society, a copy be sent to the editor of the *Journal of the American Medical Association*, to the editor of *The Journal of the Missouri State Medical Association* and a copy be sent to the family of Dr. Pare.

Committee,  
J. G. BEATY, M.D.,  
O. B. HALL, M.D.

He is survived by his widow, Mrs. Cora Fultz Pare, and a daughter.

#### FRANK N. SAVILLE, M.D.

Dr. Frank N. Saville, Springfield, a graduate of the Nebraska College of Medicine, Lincoln, 1909, died of paralysis of the throat and complications on December 12, 1937, aged 62 years.

Dr. Saville had retired from his practice in Willow Springs only a few weeks prior to his death. He had practiced in Willow Springs since 1932 and retired because of ill health.

Dr. Saville was born in Hartford, Iowa, and received his preliminary as well as his medical education in Nebraska. He practiced in Ruskin and Benedict, Nebraska, then in Farmington and Pomona, Missouri, before going to Willow Springs.

He was a member of the South Central Counties Medical Society and was an active member of the Willow Springs Chamber of Commerce.

Surviving are his widow, four daughters, three sons and a sister.

#### MARCUS L. CONE, M.D.

Dr. M. L. Cone, Campbell, a graduate of the Marion-Sims College of Medicine, St. Louis, 1895, died in Cleveland, Ohio, September 1, 1937, of pulmonary complications following an operation for rectal cancer, aged 62 years.

Dr. Cone was born in Leamington, Illinois. He completed his academic education in that state and taught school for several years before beginning his study of medicine. He attended the Cincinnati Medical College and the Marion-Sims College of Medicine. He practiced at Leamington, Illinois, for a short time and then went to Campbell where he remained in active practice for thirty-eight years.

He was active in civic and church affairs and for many years was a member of the board of education. He was a loyal member of organized medicine. He was a member of the Dunklin County Medical Society and served as president in 1926.

He is survived by his widow, Mrs. Alpha Benson Cone, a daughter and a son, Dr. William H. Cone, Astoria, Oregon.

#### AUBREY RUSSELL GREENLEE, M.D.

Dr. Aubrey Russell Greenlee, Kansas City, died December 4, 1937, at his home, 5204 Paseo. He was born in Henrietta, Missouri, and moved to Kansas City from Warrensburg when 9 years of age. In 1892 he was graduated from the University Medical College, Kansas City, and was assistant city physician the same year. Dr. Greenlee was a member of the Jackson County Medical Society, the State Medical Association, the American Medical Association, the Nu Sigma Nu medical fraternity and the Shrine.

He leaves his wife, Mrs. Rose Greenlee of the home, a sister, Mrs. E. F. Brown, and a stepson, Cecil Ninas, also of the home.—From the Jackson County Medical Society Weekly Bulletin.

#### WILLIAM P. FITZGERALD, M.D.

Dr. W. P. Fitzgerald, of Gerald, a graduate of the Missouri Medical College, St. Louis, 1887, died of in-

juries suffered in an automobile accident on September 14, 1937, aged 76 years.

Dr. Fitzgerald was born in Franklin County and attended the rural schools and the State Normal School at Cape Girardeau. He taught school for several years before entering medical college. He practiced in several locations and in 1894 went to the community which was to become Gerald. When the town was incorporated in 1907 Dr. Fitzgerald was made the first mayor. For many years he was county health physician. He was always active in civic affairs and was a 32nd degree Mason. He was a member of the Franklin County Medical Society.

He is survived by his widow, Mrs. Lizzie Henneke Fitzgerald, and two sons.

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## BOOKS FOR LEISURE MOMENTS

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### RARE PISCATORIAL ADVENTURE

I am not a fisherman. I have never cared to go fishing. On those few occasions that I have gone, I have caught only a nice mess of mosquito bites. Now I suspect that my apathy toward the delights of casting and trolling arises in the fact that I have never gone fishing with Dr. R. L. Sutton who is among that coterie of Kansas City medical men possessing a facile pen and the ability to write vividly and entertainingly in a nonprofessional way. Not that there is anything nonprofessional, to my undiscerning eye, about the manner in which Dr. Sutton goes fishing. Each trip calls for an amount of fish tackle bearing about the same relationship to the total load of luggage as your wife's hats bear to the total load of luggage which she takes along on any little journey.

A fishing excursion is nothing if not planned. I discovered that the reason I have never enjoyed fishing is because I did not plan my trips. Someone would suggest such an expedition and in an hour we might be on our way. But Dr. Sutton knows how to arrange for such a trip. In the first place he decides on the kind of fish he would like to catch—I never knew how many kinds of fish there were. Next he equips himself with several rods (poles to you, gentle reader), several different kinds of lures and reels and ingenious little hooks designed to imbed themselves in the angle of the fish's mouth (I always used a bent pin). Then there is the question of line, how many threads should be in the line and how much it should weigh (or what weight it should support). I imagine that a surgeon who must pick out a set of tools for each operation has a less difficult job of it than Dr. Sutton does in deciding just what kind of apparatus is necessary to catch what kind of fish.

The next problem to engage the attention of the would-be fisherman is the particular part of the world in which the chosen fish is to be found and the time of year at which he will respond to the lures designed to fool him. Because, as I see it, somebody has to get fooled in these fishing expeditions. Information relative to time and place is wormed out of other fishing devotees, by writing numerous letters of inquiry and by reading books. Next comes the matter of arranging for guides who will lead you to the special swimming pool of the fish which is to be favored with your attention, of boats to get you there; and then you are ready to purchase additional paraphernalia that might aid in the attainment of your objective. Until now trains, ocean steamers, rarely an airplane and the most non-descript of automobiles have served to carry Dr. Sutton to the fishing grounds. While the expenses of a fishing trip are not deductible from the income tax return, the author finds that he is most in need of such

diversion just after his annual struggle with that document.

The author is very modest in the depiction of his personal prowess as a fisherman but it is my understanding that he never returns without having made several sizeable catches. Now that introduces another point in which his fishing differs from mine. I have always gone fishing to catch fish; he often goes just for the sport of the thing. The main course of one of the most delectable breakfasts I ever ate consisted of one sixth of the single medium sized bass which was the total catch of six fishermen who delayed their breakfast for two hours in order to plumb the depths of a reputed fishing grounds. Dr. Sutton would probably have thrown this wee creature back into the lake as he has thrown much larger and much gamer (but inedible) of our finny citizens back into the ocean whence he lured them.

Despite my complete ignorance of all the lore of the Izaak Walton League Dr. Sutton writes so engagingly that I could not help but read his book which he calls "Silver Kings of Aransas Pass" (Brown-White Company, Kansas City, Missouri). In fact, I shall have to watch for his future books because each of them will insure at least one evening of entertaining diversion, except perhaps that big tome on skin diseases, a branch of the healing art which he must find at least as satisfying as his fishing excursions. B. Y. G.

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### ROMANCE MISLABELED

Fielding H. Garrison has popularized the study of medical history in this country. Under the impetus created by his well known volume numerous others have contributed their own version of some of the historical phases of medicine. Many times the fascination inherent to the lives of his scientific pioneers serves to whet the imagination of the writer, leads to the production of a moving spectacle of the kaleidoscopic succession of events that resulted in the present state of knowledge. Sometimes, however, the author fails to grasp the spirit of his subject and to make the most of it. This, possibly, is the case with Dr. Michael L. Ravitch's "The Romance of Russian Medicine" (Live-right Publishing Corporation, New York).

The first part of his book delineates the herb and nature practices of the primitive Russian. They follow, in order, the medical practices current under various régimes. Even the account of the inoculation of Catherine of Russia with the smallpox by the English physician, Dimsdale, lacks the grandeur which such courage on the part of the empress might readily inspire. Over a third of the volume is given over to the biographies of Russian physicians. Whether this section will eventually serve as a reference source for further studies is difficult to say. The fact that Pavlov, probably the greatest physician of all the Russians and certainly the one best known to the Western World, is dismissed in eight pages makes even this doubtful. On the other hand, the differences which existed between this great scientist and the Soviet régime may have served to diminish his luster in the eyes of an author whose work may be considered just as much propaganda in behalf of the Soviet as it is an effort to popularize the Medicine of the Russians. B. Y. G.

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### REORIENTATION OF THE SEXUAL IMPULSE

A DaVinci might not be flattered to learn that his artistic talent arose in the infantile pleasure he derived from smearing the contents of a soiled diaper over whatever happened to be at hand. A modern endocrinologist might not agree that obesity results from the satisfaction of oral erotic desire, transmuted from fel-



latic practices into incessant stuffing with food. Indeed, the complete absence of sexual curiosity manifested by many juvenile fat boys might cast doubt upon the conception that their inordinate preoccupation with edibles represented only the submergence of erotic desire. Nevertheless Dr. O. Spurgeon English and Dr. Gerald J. Pearson of Tulane University present a convincing argument that the emotional drives of the individual patient are deserving of more thorough study in the elucidation of somatic complaints. Their book, "Common Neuroses of Children and Adults" (W. W. Norton & Co., New York) is readable, entertaining and understandable, even though one may doubt the results of a too general application of their doctrines. They observe that a physician may mistakenly treat ten cases of neurosis for organic disease without suffering embarrassment but he will hesitate to treat one case of neurosis for a neurosis lest he lose caste with his professional colleagues and because he fears to have overlooked the presence of organic disease.

The personality is composed of three parts. The first of these known as the id (not It) is composed of the instinctual drives of the individual. This is modified by the ego, that portion of the personality which is concerned with earning the approbation of other persons in the community. The ego in turn is overshadowed by the superego, the automatic governing force of the personality. Throughout most of this volume which manifests the deep Freudian saturation of its authors, primary concern is with the id and more especially with those portions of it having to do with oral, anal and genital eroticism.

To the nonFreudian it is most amazing to find how easily the Freudian can relate almost any activity of the individual to frustrations, anomalous growth or perversions of the oral, anal or genital erotic phases of development. Indeed, in the case of infants one is tempted to wonder what superintellectual prowess was present in the child that he might uncover for the analyst the relationship existing between, let us say, bedwetting, and a frustration of the Oedipus complex. The nonFreudian is forced to question the assumption of postponed and hence increased pleasure derived by the child as he acquires the condition of chronic constipation from refusal to empty the bowels at the first urging. Or that there is a usual connection between early toilet habits and the later development of a neurosis. It seems that such distortions of physiologic function can be better explained otherwise.

Nevertheless there is much in this volume that merits the careful consideration of the medical practitioner. In certain persons presenting somatic symptoms the existence and motivating power of sexual frustration and distortion cannot be denied. In them the aim of therapy should rightly be the correction of those attitudes which interfere with sexual expression. In that regard the authors advise that in certain homosexuals no attempt be made to convert the patient into a heterosexual individual but that every effort should be made to bring about such social adjustments as will permit his continued participation in society.

The recommended therapy is usually, as is to be expected, a course of psychoanalysis according to the Freudian technic. Pearson and English recognize the impossibility of obtaining this in most cases because between one and two years is required for treatment. During this period of time a daily session of one hour with the analyst is advised. Manifestly this imposes an impossible financial burden on the average patient. For this reason, in each of the sections devoted to therapy appropriate advice as to reeducation and reorientation that may be carried out by the psychiatrically minded practitioner is included.

The book is well worth the study of any physician who, like Houston, sees that more than 40 per cent of

his patients have complaints finding their origin in the emotional field although the expression of such complaints may be purely somatic. In any event the literary ability of the authors makes it certain that a pleasant and entertaining evening or two will be provided.

B. Y. G.

#### ARTHRODESIS OF OSTEOARTHRITIC HIP

According to R. Watson-Jones, Liverpool, England (Journal A. M. A., Jan. 22, 1938), in the later stages of osteoarthritis of the hip joint there are two main sources of incapacity—the pain on movement and weight bearing, and the stiffness of the joint. There can be no doubt that pain is the more incapacitating factor. Patients with completely stiff hips and no pain have extraordinarily little disability. On the other hand, patients with one-third or one-half normal movement may be unable to walk 100 yards, owing to pain. In treatment, therefore, abolition of pain must be the primary consideration. Arthroplasty of the hip can usually be relied on to increase the motion of the joint, but it cannot be relied on to relieve pain. It would appear, therefore, that in cases of unilateral osteoarthritis of the hip joint in which the joint is almost entirely destroyed, arthrodesis should be the treatment of choice. It has not been the treatment of choice for two reasons: The surgeon has been unable to rely on sound bony fusion and it has been believed that arthrodesis produces or aggravates pain in the back. A technic is reported by which successful consolidation may be assured. The results in fifty cases are given, which prove that painless stiffness of the hip accounts for minimal incapacity, that it seldom aggravates the pain in the back and that in some cases it may even relieve it. It matters not whether the bone is sclerosed from disease or atrophied from age. The clue to successful fusion, after the joint is denuded of cartilage, is control of rotatory movement, a control which cannot be assured by the plaster spica but which can be assured by a three flanged nail driven from the femur into the pelvis. The nail has been driven from the cortex of the femur below the trochanter into the roof of the acetabulum, where there is a 1 inch (2.5 cm.) thick bar of bone running up to the sacro-iliac joint. The average length of nail is from  $4\frac{3}{4}$  to  $5\frac{1}{2}$  inches (12 to 14 cm.). Accurate placing is of such importance that now cannulated nails preliminary guides and radiographic control in both anteroposterior and lateral planes are used. A plaster spica is applied and the patient is recumbent for about three months. A completely successful result depends not only on firm consolidation but on fixation in the ideal position. The femur must be as nearly as possible at right angles with the pelvis; it is as wrong to produce an abduction deformity as to allow an adduction deformity. Strictly neutral rotation, with the patella and foot directed forward, is essential. Finally, the hip must not be deliberately flexed. As the patient lies flat on the operating table, with his shoulder, buttocks and heels touching the table, there is always lumbar lordosis sufficient to produce from 25 to 30 degrees of flexion deformity. This is sufficient for comfortable sitting, and if the hip is flexed more than this the patient walks badly. The first operations of this type were performed two years ago, and the results are still satisfactory. Pain is completely relieved, and the joint remains firmly fixed by a simple procedure. There are certain risks which do not apply to the open operation. There is a greater danger of splitting the bone and fracturing the femur, and the result depends on the strength of the steel nail and on the development of a cortical bridge of bone over the head of the nail before any sliding occurs.

## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.

Perry County Medical Society, December 4, 1937.

Ste. Genevieve County Medical Society, December 14, 1937.

Camden County Medical Society, January 7, 1938.

Webster County Medical Society, January 7, 1938.

Montgomery County Medical Society, January 14, 1938.

Dent County Medical Society, January 21, 1938.

#### ASSOCIATE EDITORS: COUNCILORS OF THE TEN COUNCILOR DISTRICTS

##### FIRST COUNCILOR DISTRICT

###### A. S. BRISTOW, PRINCETON, COUNCILOR

###### Buchanan County Medical Society

The Woman's Auxiliary to the Buchanan County Medical Society were guests of the Buchanan County Medical Society at the annual installation meeting at the Moila Club, St. Joseph, on December 15. The Francis Marion's String Ensemble played during the banquet.

Dr. Charles Greenberg, retiring president, administered the oath of office to the incoming officers.

Dr. E. E. Wadlow, chairman of the program committee, introduced Mrs. C. H. Werner, president of the Woman's Auxiliary to the Missouri State Medical Association; Mrs. W. H. Minton, president of the Auxiliary to the Buchanan County Medical Society, and Mrs. A. B. McGlothlan, past president of the Auxiliary to the American Medical Association. Each doctor was then invited to introduce his wife and guests.

Miss Carolyn Carle, daughter of Dr. H. W. Carle, accompanied at the piano by Miss Mary Jane Wright, daughter of Dr. G. D. Wright, rendered two vocal solos.

Dr. Gregg Thompson showed motion pictures, many of which were in color, taken during his trip to South America.

The joint meeting adjourned with a rising vote of thanks to Dr. Wadlow and his committee for a most pleasant and enjoyable evening.

#### Meeting of January 5

The Society met at the Missouri Methodist Hospital with the president, Dr. G. T. Bloomer, presiding.

A letter which Mrs. C. H. Werner had received from Helen H. Sala in regard to establishing a Society for Mental Hygiene in St. Joseph was read. The proposed society was discussed and explained by Dr. G. M. Forman of the St. Joseph State Hospital. It was moved by Dr. H. E. Petersen that the clientele of the proposed society be investigated to determine the type of patient to be cared for in the clinic which the society plans to establish. The matter was referred to the medical social service committee.

Dr. Jacob Kulowski, St. Joseph, spoke on "Intracapsular Fracture of the Hip," emphasizing the use of the Smith Peterson nail in treatment. The paper was most interesting and the essayist illustrated his discussion by slides of roentgen rays of numerous intracapsular hip fractures. The paper was discussed by Dr. Gregg Thompson and closed by Dr. Kulowski.

O. EARL WHITSELL, M.D., Secretary.

#### Clinton County Medical Society

The Clinton County Medical Society met at the Cameron Hotel, Cameron, on December 8.

Dr. A. S. Bristow, Princeton, Councilor, made an excellent talk on organized medicine. He stated that if the Society wished to reorganize 1938 dues would be accepted as the Society had not met for several years.

On reorganization the following officers were elected: President, Dr. W. B. Spalding, Plattsburg; secretary, Dr. P. M. Steckman, Plattsburg.

Those present were Drs. J. C. Starks, Gower; W. B. Spalding and P. M. Steckman, Plattsburg; A. O. Gilliland and M. L. Peters, Cameron.

P. M. STECKMAN, M.D., Secretary.

#### Grundy-Daviess County Medical Society

The Grundy-Daviess County Medical Society met at the Trenton National Bank Building, Trenton, on January 4.

The president, Dr. W. A. Fuson, Trenton, appointed Dr. Fred K. Wilson, Winston, delegate to the annual session, and Dr. Robert V. Thompson, Jamesport, alternate, from Daviess County.

The following were elected honor members: Drs. Jacob Bried, J. F. Fair and W. H. Winningham, Trenton; H. E. Bowers, Galt.

E. A. DUFFY, M.D., Secretary.

#### SECOND COUNCILOR DISTRICT

##### H. B. GOODRICH, HANNIBAL, COUNCILOR

###### Linn County Medical Society

The Linn County Medical Society met in the office of Dr. Roy Haley, Brookfield, on January 11.

The following were present: Drs. Roy Haley, L. J. Pierce, J. H. Lucas, J. L. Evans, S. T. Brownfield, Brookfield; P. L. Patrick, G. B. Putman, Marceline; J. R. Dixon, Linneus; E. F. Weir, Meadville.

The following officers were elected: President, Dr. L. J. Pierce, Brookfield; vice president, Dr. E. F. Weir, Meadville; secretary and treasurer, Dr. G. B. Putman, Marceline.

It was decided to have two dinner meetings with the Auxiliary and speakers to which the Chariton County Medical Society would be invited and two or three other meetings as necessary.

A memorial service for deceased doctors of the county was discussed and the president appointed Drs. S. T.



Brownfield, J. L. Evans and J. R. Dixon on a committee on arrangements.

G. B. PUTMAN, M.D., Secretary.

### Marion-Ralls County Medical Society

The Marion-Ralls County Medical Society met at St. Elizabeth's Hospital, Hannibal, on January 7, with Dr. C. E. Salyer, Hannibal, president, in the chair. Fifteen members were present.

Dr. H. J. Shelton, Palmyra, was elected to membership.

Dr. W. J. Smith, Hannibal, moved that the same library board serve for the ensuing year and that there be three members; one serving one year, the second serving two years and the third serving three years, and that each succeeding year there be a new member elected. The motion carried.

Dr. H. B. Goodrich, Hannibal, Councilor, suggested that the Second Councilor District have a meeting each year. It was decided to have the dinner meeting in Hannibal in April. Drs. B. L. Murphy, W. F. Franeka and H. B. Goodrich were appointed a committee on arrangements.

Dr. E. M. Lucke, Hannibal, asked that all physicians treating measles report cases to his office so that he could quarantine. He stated that this quarantine was of value in preventing outsiders from carrying in other diseases and thus complicating measles. Dr. Lucke asked the Society for discussion as to whether or not cases of sore throat should be quarantined. The Society did not feel that these cases should be quarantined.

After a discussion on chlorine washes for glasses in public places a motion that the Marion-Ralls County Medical Society go on record as suggesting that the city council adopt an ordinance for sterilization of glasses in restaurants, cafes, taverns and all public places did not carry.

B. L. MURPHY, M.D., Secretary.

### Randolph-Monroe County Medical Society

The Randolph-Monroe County Medical Society met at the Public Library, Moberly, on December 14. Those present were Drs. P. C. Davis, C. K. Dutton, R. D. Streetor, C. C. Smith, T. S. Fleming, L. L. Grzesk, F. L. McCormick, M. E. Kaiser, M. E. Leusley, L. O. Nickell and M. P. Hunter, Moberly.

The following officers were elected: President, Dr. George M. Ragsdale, Paris; vice president, Dr. F. L. McCormick, Moberly; secretary, Dr. M. E. Kaiser, Moberly; delegate from Randolph County, Dr. F. L. McCormick, Moberly, alternate, Dr. T. S. Fleming, Moberly; delegate from Monroe County, Dr. M. C. McMurry, Paris, alternate, Dr. George M. Ragsdale, Paris; censor for three year term, Dr. C. C. Smith, Moberly.

Dr. L. L. Grzesk, Moberly, gave a talk on "The Comparative Treatment of Fractures."

Following the meeting a luncheon was served at Miller's Cafe.

M. E. KAISER, M.D., Secretary.

### FOURTH COUNCILOR DISTRICT

R. B. DENNY, CREVE COEUR, COUNCILOR

#### St. Louis County Medical Society

The St. Louis County Medical Society met at 8:45 p. m. on December 22.

Dr. Wendell G. Scott, St. Louis, read a paper on "Roentgen Ray Diagnosis and Treatment of Carcinoma of the Stomach and Esophagus."

Dr. Charles F. Sherwin, St. Louis, read a paper on

"The Surgical Treatment of Carcinoma of the Stomach and Esophagus."

These papers were discussed by Drs. J. D. Hayward and Andy Hall, St. Louis, and R. A. Walther, Overland, and others.

Dr. T. J. Kemp, St. Louis, stated that the cards for the banquet were coming in very slowly and requested that the members be more prompt in their responses.

JULIUS JENSEN, M.D., Secretary.

### FIFTH COUNCILOR DISTRICT

M. PINSON NEAL, COLUMBIA, COUNCILOR

#### Callaway County Medical Society

The Callaway County Medical Society met at the Callaway County Hospital at 7:30 p. m., January 13, with thirteen present.

The president appointed the following standing committees: Committee on public relations, Drs. J. N. McCubbin and J. J. Brown, Fulton; committee on membership, Drs. R. N. Crews and T. S. Lapp, Fulton. Dr. Ralf Hanks, Fulton, was appointed on the auditing committee to succeed Dr. J. E. Mulkey, Fulton.

A letter from Dr. C. A. Powell, St. Louis, was read in which he accepted the invitation to address the Society on "The Treatment of Pneumonia" on January 27. The secretary was instructed to invite members of adjoining societies to attend this meeting.

Dr. J. J. Brown, Fulton, read a communication from the Fulton Public School Board recommending the adoption of a uniform method of dealing with contagious diseases and asking the cooperation of the members of the Society. The communication was referred to the committee on public relations.

Dr. F. A. Barnett, Fulton, asked permission to give a talk on syphilis before the P. T. A. This was referred to the committee on public relations.

Mr. W. E. Jameson of the State Eleemosynary Board presented a plan for an organization on mental hygiene in Fulton. This was referred to the committee on public relations.

Dr. W. H. Williamson, Mokane, presented a case record making a diagnosis of infected bladder with a tumor mass, a septic kidney and stomach complication. The anatomical diagnosis was perforated ulcer of the stomach, pneumonia, carcinoma of the bladder, renal calculi, pyleonephrosis, general arteriosclerosis, emphysema.

R. N. CREWS, M.D., Secretary.

### SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

#### Henry County Medical Society

The Henry County Medical Society met at the office of Drs. S. B. Hughes, Clinton, on December 17, at 8 p. m.

The following were present: Drs. J. R. Rogers, Brownington; J. W. Galbreath, Urich; A. L. Hansen, Appleton City; L. V. Dawson, Ottawa, Kansas; E. C. Peelor, J. R. Hampton, S. B. Hughes, R. S. Hollingsworth, G. S. Walker, S. O. Smith and S. W. Woltzen, Clinton.

Dr. Samuel R. Harwood, Montrose, was elected a member.

The following officers were elected: President, Dr. S. W. Woltzen, Clinton; secretary-treasurer, Dr. E. C. Peelor, Clinton; delegate, Dr. G. S. Walker, Clinton; alternate, Dr. S. W. Woltzen, Clinton.

A motion to have the regular meetings on the last Thursday of each month carried.

Dr. L. V. Dawson, Ottawa, Kansas, spoke on "Fractures of the Femur."

S. W. WOLTZEN, M.D., Secretary.

### Lafayette County Medical Society

The Lafayette County Medical Society met in Higginsville, December 28.

The following officers were elected: President, Dr. A. D. Johnston, Corder; president-elect, Dr. C. T. Ryland, Lexington; secretary-treasurer, Dr. W. E. Koppenbrink, Higginsville; member of board of censors, Dr. W. E. Martin, Odessa; delegate, Dr. C. T. Ryland, Lexington; alternate, Dr. A. D. Johnston, Corder; reporter, Dr. E. S. Wallace, Lexington.

After the election the meeting adjourned to a delightful social session at the home of Dr. and Mrs. Braecklein.

#### Meeting of December 30

The Lafayette County Medical Society held its annual banquet in Lexington on December 30, having as its guests the members and wives of the Johnson County Medical Society and Dr. and Mrs. L. M. James, Blackburn.

Mr. Matthew Connelly, member of the faculty of Wentworth Military Academy, Lexington, spoke on "Benedict Arnold, the Doctor and the General."

E. S. WALLACE, M.D., Reporter.

### NINTH COUNCILOR DISTRICT

W. H. BREUER, ST. JAMES, COUNCILOR

#### Phelps-Crawford County Medical Society

The Phelps-Crawford County Medical Society has held twelve meetings during the last year at the Rolla Hospital, Rolla, with an average attendance of nineteen. The meetings included a dinner served by the hospital to members and visitors at 7 o'clock followed by clinics and lectures by one or more invited guests.

The following programs were presented during the year: Dr. C. H. Neilson, St. Louis, "Functional Diseases"; Dr. John Hammond, St. Louis, "General Care of Cardiac Conditions"; Dr. Ross A. Woolsey, St. Louis, "The Acute Abdomen"; Dr. Martin F. Engman, St. Louis, "Eczema"; Dr. O. F. Bradford, Columbia, "Infant Feeding"; Dr. M. Pinson Neal, Columbia, "The Value of the Differential Blood Count"; Dr. Dudley S. Conley, Columbia, "The Suppurative Appendix"; Dr. M. R. Aldridge, Jefferson City, "Appendicitis"; Dr. J. S. Summers, Jefferson City, "Middle Ear Infection"; Dr. Fred Shaw, Richmond, Virginia, "Fungus Diseases"; Dr. G. V. Stryker, St. Louis, "Skin Manifestations in Syphilis"; Dr. Newell W. Schlueter, St. Louis, "Bullae Eruptions in Children"; Dr. E. Lee Dorsett, St. Louis, "Abortions: Proper Management," and Dr. G. Wilse Robinson, Kansas City, "Mental Health."

R. E. BREUER, M.D., Secretary.

### TENTH COUNCILOR DISTRICT

A. H. MARSHALL, CHARLESTON, COUNCILOR

#### Pemiscot County Medical Society

The Pemiscot County Medical Society met in Caruthersville at the McDonald Eat Shop, December 16, with the president, Dr. J. R. Pinion, Caruthersville, presiding.

The following officers were elected: President, Dr. Philip J. Aquino, Caruthersville; vice president, Dr. A. J. Speer, Deering; secretary-treasurer, Dr. W. R. Limbaugh, Hayti; delegate, Dr. W. R. Limbaugh, Hayti; alternate, Dr. J. B. Luten, Caruthersville; censor for three years, Dr. J. R. Pinion, Caruthersville.

Drs. C. F. Cain and F. L. Ogilvie, Caruthersville, were elected to membership.

During 1938 the Society will meet on the third Thursday of each month.

The following members and guests were present: Drs. J. R. Pinion, J. B. Luten, Philip J. Aquino, C. C.

Castles, C. F. Cain and Fred L. Ogilvie, Caruthersville; L. E. Cooper, Cooter; A. G. Shirey and W. R. Limbaugh, Hayti, and Asa Barnes, Kennett.

W. R. LIMBAUGH, M.D., Secretary.

### Scott County Medical Society

The Scott County Medical Society met on January 12 at Benton.

The following officers were elected: President, Dr. Howard A. Dunnaway, Sikeston; vice president, Dr. G. T. Dorris, Illmo; secretary, Dr. U. P. Haw, Benton; censor for three years, Dr. W. O. Finney, Chaffee.

A round table discussion on various district health unit problems, the allocation of funds for lectures to country doctors and the State Association was held.

U. P. HAW, M.D., Secretary.

## WOMAN'S AUXILIARY

### WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

16th Annual Meeting, San Francisco, 1938

President, Mrs. Augustus Kech, Altoona, Pennsylvania.

President-Elect, Mrs. Charles C. Tomlinson, Omaha, Nebraska.

### WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

14th Annual Meeting, Jefferson City, 1938

President, Mrs. Charles H. Werner, St. Joseph.

President-Elect, Mrs. Herbert L. Mantz, Kansas City.

Mrs. David S. Long, Harrisonville, is organizing the state for the educational campaign on cancer to be conducted next April by the Women's Field Army.

The Buchanan County Medical Society installed officers at the annual meeting of the Society and the Auxiliary on December 15 at 7 o'clock at the Moila Club. Dr. Gregg Thompson gave a talk on his South American trip illustrating with motion pictures. Miss Carolyn Carle sang a group of songs accompanied by Miss Mary Jane Wright, both daughters of physicians. Dr. Charles Greenberg, outgoing president, presided and installed the new officers. The program committee included Drs. E. E. Wadlow, C. H. Werner and Cabray Wortley.

At the meeting of the Woman's Auxiliary to the Buchanan County Medical Society held December 8 at the home of Mrs. W. H. Minton, the members brought gifts for the pupils of the Krug Opportunity School. The printing class of the school made up the Auxiliary yearbooks this fall. The Auxiliary has sent 104 *Hygeia* subscriptions to the public and parochial schools of the city and county.

The Jackson County Auxiliary has issued its 1937-38 yearbook in which the aims and objectives of the Auxiliary are listed as follow: 1. Social: (A) To create an atmosphere of friendliness, warmth and welcome through fellowship between doctors and their wives; (B) to assist with entertainment at medical meetings. II. Service: (A) Help the *Bulletin* to success by patronizing subscribers in the Buyers Guide and by showing your identification card. (B) Make membership mean more; an active member is always an interested member; increase membership. (C) Public relations; inform yourself to inform others on new medicines and



methods and on new legislative bills. (D) Promote *Hygeia*; each member a subscription, each doctor a subscriber. (E) Encourage the essay contest by offering larger prizes to stimulate interest and to increase the number of entrants. (F) Support the tuberculosis drive and cancer control.

The Jackson County Auxiliary will give \$40 in prizes in the essay contest.

Mrs. G. L. Hendren, Liberty, was elected president of the Clay County Auxiliary at a recent dinner meeting held by the Medical Society and Auxiliary at Excelsior Springs.

The Johnson County Medical Society and Auxiliary held their annual meeting November 10 at the DeVault Hotel, Warrensburg. The Lafayette County Society and Auxiliary were guests. Speakers were Dr. E. Lee Miller, Kansas City, and Mrs. C. H. Werner, St. Joseph.

Mrs. David S. Long, Harrisonville, was in Jefferson City on December 3 and St. Louis on December 4 in connection with her work as commander for Missouri of the Women's Field Army. She presided at meetings in both places. Mrs. Marjorie Ullig, National Commander, and Dr. F. L. Rector, Field Representative for the American Society for the Control of Cancer, were speakers.

Mrs. Charles H. Werner, St. Joseph, has visited seventeen of the twenty auxiliaries in Missouri. She was one of nine state presidents who wrote articles for the November *National News Letter*.

Mrs. Augustus S. Kech, Altoona, Pennsylvania, President of the Woman's Auxiliary to the American Medical Association, has written the following "Ten Commandments for a Doctor's Wife":

1. The doctor's wife must be a good business woman and able to keep up a good appearance on a limited budget because doctors do not have a large income, the average being \$2500.
2. She must be intelligent and able to meet her husband on an equal intellectual basis.
3. She must be patient and possess a sense of humor.
4. She must be diplomatic, standing as she does between the public and a tired, overworked man.
5. She must not become angry at broken social engagements or late meals.
6. She must be ready to carry on for him in civic and religious ways.
7. She must combine the abilities of a nurse, secretary and telephone girl.
8. She must have social poise and steady nerves.
9. She must never violate a doctor's confidence.
10. And, above all, she must refrain from gossip.

The sympathy of the Buchanan County Auxiliary is extended to Dr. Floyd H. Spencer, St. Joseph, because of the death on January 9 of his mother, Mrs. Emma B. Spencer.

Mrs. Charles H. Werner, St. Joseph, President of the State Auxiliary, was guest speaker at a luncheon meeting held in the Leeper Hotel, Chillicothe, January 10, by the Woman's Auxiliary to the Livingston County Medical Society. Following the meeting Mrs. Werner and Mrs. A. J. Simpson, a member of the Caldwell-Livingston County Auxiliary, drove to Trenton for a conference with Mrs. E. J. Mairs, Trenton, secretary of the Grundy-Daviess County Auxiliary. The president of that Auxiliary, Mrs. E. A. Duffy, Trenton, has been ill.

On January 6 Mrs. Werner was the guest of the Jackson County Auxiliary and addressed a group of about one hundred thirty members. The meeting was held in the home of Dr. and Mrs. E. H. Schorer, Kansas City. An interesting talk on marijuana was given by Dr. R. M. Isenberger, Kansas City, Kansas. This was followed by a musical program and tea.

In her tour of the state, Mrs. Werner has visited eighteen of the twenty-one auxiliaries and has con-

ferred with officers of two other auxiliaries. She has stressed the need of informed, alert members and has found that programs have been planned with that in mind. Public relations meetings, with physicians as speakers, are being held by all groups; all auxiliaries are sponsoring the promotion of *Hygeia*, and the majority are sponsoring the essay contest in senior and junior high schools on the subject "What I Can Do to Prevent Contagion." In addition to the above program a number of the auxiliaries are doing some special work such as furnishing a room in the new hospital at Nevada; aiding in the Crippled Children's Clinic at Marshall; adding \$100 each year to a benevolent fund at St. Louis; aiding a Negro nursery school and community house at Columbia; a Christmas shower for the Opportunity School at St. Joseph; sending a 4-H Club girl to the state meeting from Cass County, and aiding the Society with its *Bulletin* advertising plan in Kansas City. The Auxiliary in Kansas City expects to reach its quota of 274 annual subscriptions to *Hygeia*. The St. Joseph Auxiliary has a total of 110 subscriptions, 104 of them having been sent to the schools of the county, and hopes to equal its total of 144 subscriptions secured last year. The quota for this Auxiliary is 65.

The Buchanan County Auxiliary met January 12 at the home of Dr. and Mrs. J. M. Allaman. Mrs. A. B. McGlothlan gave a talk on "New Developments in Social Security in Missouri"; Mrs. Charles Geiger gave three piano solos and the business meeting was followed by a social hour and tea. The February meeting will be held at the home of Mrs. Charles Greenberg.

Mrs. Augustus S. Kech, Altoona, Pennsylvania, the National President, will visit the Missouri Auxiliary on March 4 at a meeting in Kansas City.

## CORRESPONDENCE

### MORE OF SYPHILIS AND MORALS

Kansas City, Mo., December 20, 1937

To the Editor:

More of Syphilis and Morals.

Here is a letter from Dr. Joseph Earle Moore, Baltimore, editor of the *American Journal of Syphilis, Gonorrhea and Venereal Diseases*, a good enough friend to disagree with me and tell me so. You will surely wish to publish it, as I would wish you to. The letter follows:

Dear Dr. Sutton: Thank you very much indeed for sending me your letter to *The Journal of the Missouri State Medical Association* ("Syphilis and Morals," November, 1937, issue) with which I must in the friendliest possible fashion completely disagree. One can argue the question of the relationship of morals and syphilis from two points of view: First, from the purely ethical standpoint, and, second, from the standpoint of expediency.

As to the purely ethical standpoint, I find it hard to forget the etymological derivation of the word "morals" which comes, as you recall, from the Latin word "mores," an alternative meaning of which is "customs." Any study of comparative religion will indicate quite clearly that there is nothing God-given about the moral standard of any particular civilization, whether the word moral is applied specifically, as you have applied it, to sex, or whether it includes, as the philosophers would have it do, much broader social relationships. Confining ourselves, however, to sexual morals, it is obvious on the surface that the morals and customs of one country may differ widely from those of another, more particularly if the countries differ ethnologically. What is moral for an American

college graduate living in Kansas City may be completely immoral for the Australian aborigine or for the Turk, and vice versa. Furthermore, within any one country moral standards may vary and often have varied at different periods in its history. Likewise within a given country and at the same time moral standards may vary as between different civic or religious groups. Thus, in certain Christian religions in this country the marriage of second cousins is an immoral, incestuous relationship, whereas in others it is freely permitted.

It is true that the human race is theoretically monogamous and that in this and most other civilized countries monogamy is looked upon as an ideally desirable state of affairs. With the male sex preponderantly, however, and also to a lesser extent than the female sex, the ethical aspect of this situation comes into sharp conflict with the endocrinological aspect; and also with the sociological aspect as well. Even the most puritan moralist will not deny the strength of the sexual impulse and only one who shuts his eyes to realism will fail to understand that the large majority of mankind and a respectable minority of womankind have indulged in major or minor premarital or extramarital sexual experiences. Premarital sexual experience is of course well nigh universal among both boys and girls, provided one includes within the term the minor amorous contacts of youth. Using numerous surveys of the sex experiences of well educated men and women, for example college graduates, it is further clear that from 10 to 15 per cent of the women and from 60 to 80 per cent of the men have abandoned virginity before marriage.

The individual among these non-virgins who contracts syphilis as a result of premarital or extramarital sexual experience differs from the majority of his fellows only in that he was unfortunate enough to get syphilis. The act which precipitated his plight was indulged in by countless numbers of his associates who are not condemned by society for their acts, largely because they didn't get caught. In this sense the religious and social points of view are of course different since any of the Christian religions frown upon illicit sexual experience, whereas society as a whole does not. I am often tempted to repeat to him who condemns the syphilitic as a moral leper the words of Jesus Christ, "Let him who is without sin throw the first stone." If this point of view were generally adopted, the people with the ability to throw rocks with a clear conscience would be in a very small minority.

Unless you are willing to agree therefore with the point of view that every individual who indulges in premarital or extramarital sexual experience is, to quote your own words, "a cheat, a cad and a killer of babies," I am afraid you have put yourself in a somewhat untenable position; and that you will be forced to look upon a number of your own close friends as belonging to the undesirable categories you mention.

My disagreement with you is, however, not entirely limited to the ethical considerations which I have outlined above, but also to considerations of expediency. Even granting that your point of view is right, it seems to me highly unwise for a physician who is interested in the control of syphilis to express it. If I were to point out to each of my male patients that I regarded him as "a cheat, a cad and killer of babies"; or to my woman patient who may have acquired the disease by a premarital or extramarital contact that I felt her to be on a level with a common prostitute, I should promptly

have no practice. If the medical profession as a whole takes this point of view, the infectious syphilitic will be driven even further under cover than he now is, and the control of syphilis would be anything but furthered. It is hard to find any analogy to this situation in the medical field but perhaps the closest one that can be drawn is with the elimination of hookworm. Had the public health officers interested in the control of this infestation emphasized the point that the majority of patients with hookworm were of such filthy personal habits as to walk barefoot in their own excrement, the resentment created among the infested population might have led to a few lynchings and to not much less hookworm.

It would be possible to labor further both the points I have tried to make with you and, as a matter of fact, books have been written about them both. To my way of thinking, however, the entire situation may be summarized by saying that the physician is not a policeman, is not a priest, and that he has no right to inflict upon his patients his own religious concepts or to apply to them personally his own point of view as to moral standards.

If the medical profession is seriously interested in the control of syphilis, it can, I believe, bring about this end only by insistence upon the point of view that syphilis is a disease and not a sin. Preventive medicine is not served by a "holier-than-thou" attitude.

I am sure that you will understand that this debate between us is in the friendliest possible fashion. If you believe the subject to be of sufficient importance and interest, you have my permission to send this letter to the editor of *The Journal of the Missouri State Medical Association* with the request that it be printed in rebuttal to your own.

J. E. MOORE, M.D.

#### Reply by Dr. Sutton

I would request that, before believing Dr. Moore has successfully contradicted me, the reader will compare what he says with what I said. My attitude is never of telling people how to conduct themselves, but rather of telling them why they may choose to conduct themselves in certain ways. This is individual morality in contrast with what I might call statistical morality. There is, I assert, morality of the man considering his conduct within himself; while "mores," I agree, is conduct observed in a group from without. The two are as different in point of view as "free will" and "behaviorism" are different, or as subjective and objective are. Group "mores" are variable at different times and societies. But surely a biologist cannot find it hard to believe that certain conduct has been and always will be unacceptable, at all times among all people. I believe that such a least common denominator exists, that certain truths are persistent independently of my thinking about them, that right and wrong possess this attribute, an attribute analogous to that mathematical permanence, two and two make four.

This debate I would remove from Christian morality to biologic morality, for I am an ill-informed Christian and not a missionary.

From Dr. Moore's two standpoints, of pure ethics and expedient ethics, I say that pure ethics (as well as the law) to my notion allows the wrongness of knowingly giving one's reproductive dependents syphilis; and that expedient ethics is not ethics at all.

Each of Dr. Moore's 10 to 15 per cent college women and 60 to 80 per cent college men who abandon virginity ought to be "aware that such a disease exists . . . that the disease may be contracted in any of the various ways whereby living spirochetes may be transmitted from one human being into another." If aware,



the person is wrong (probably knows it, too—few are unmoral), if unaware, ignorant or a fool.

Ignorance is the vulnerable part of the syphilis problem. I say, teach children the truth, teach them the ability to choose, and have sympathy with the others, who are fools.

It is true that most people with hookworm are people who walk barefoot in their excrement; one need not be intolerant, unkind or stone-throwing on that account, else one might well earn the lynching. One need not be holier-than-thou to possess moral standards, and to adhere to them, and even to submit them to others for their acceptance or rejection. The physician is no policeman, but he may be a thinking being. He may love his fellows despite their faults, and he may recognize a fault or two of his own. He may measure a man in silence by his own yardsticks and know him to be a cheat—they are numerous—and a cad ("a mean, vulgar fellow," says Webster)—and a killer of babies—probably through ignorance and thoughtlessness. If through ignorance, it is the fault of those who know but do not tell. And the physician may treat the sick man with sympathy and gentleness and without "kidding" himself.

RICHARD L. SUTTON, JR.

## BOOK REVIEWS

**CLINICAL ALLERGY.** By Louis Tuft, M.D., Chief of Clinic of Allergy and Applied Immunology, Temple University Hospital; Associate in Immunology, Temple University School of Medicine; Director of Laboratories, Pennsylvania Department of Health, Philadelphia. Introduction by John A. Kolmer, M.D., Ph.D., D.Sc., LL.D., J. H. D., Professor of Medicine, Temple University. 711 pages with eighty-two illustrations. Philadelphia and London: W. B. Saunders Company. 1937. Price \$8.00.

It is the purpose of this book to present the subject of allergy in a manner designed to be of more value to the student and to the general practitioner than to the experienced allergist. As such it expresses general opinions more commonly than the author's personal experiences and opinions though many illustrative case histories with methods of treatment are included.

Adequate information designed to prepare a theoretical and clinical background necessary to recognize the allergic state is presented not only in the section devoted to the general principles of allergy but is continued throughout. The section on etiological types of allergy is a discussion of possible symptomatology from the different allergens as well as the source and distribution of pollen producing grass and weeds and the preparation and standardization of pollen extracts. The clinical pictures of the more commonly recognized types of allergy and the methods of diagnosis and treatment are presented in detail in the section on the clinical manifestations of allergy.

The final section is devoted to the allergic dermatoses and the possibility of allergy as an etiological basis for other diseases encountered in general medicine. There is an appendix which describes laboratory methods, gives instructions for asthmatic and hay fever patients, a list of allergens which includes the inhalants, contacts and ingestants and a list of allergic diets and recipes. A summary at the end of each chapter is helpful and time saving. Though the value of skin testing in food sensitization is rather overemphasized the author recommends clinical trial for the ultimate proof of suspected foods. The importance of food sensitization in adults is not sufficiently emphasized but on the whole the presentation of the subject of allergy is a thorough

one. It is concisely written and the aspects of allergy which are subject to a difference of opinion are plainly defined as such.

The author has produced a satisfactory book for those who wish to acquaint themselves with the various manifestations of allergy and their treatment but the addition of such a book to the present voluminous literature on allergy is of questionable value.

L. P. G.

**PHYSICAL THERAPY IN ARTHRITIS.** By Frank Hammond Krusen, M.D., Associate Professor of Physical Medicine, The Mayo Foundation, University of Minnesota; Head of the Section on Physical Therapy, The Mayo Clinic. Foreword by Melvin S. Henderson, M.D. With twenty-one illustrations. New York: Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers. 1937.

As the title indicates this small volume limits itself entirely to a discussion of the various physical methods available for the treatment of the chronic arthritic. The methods available for home treatment have been emphasized and should prove very interesting to the general practitioner as they are simple and practical.

It is perhaps unfortunate that the author did not give more detailed instructions for the use of massage and exercise since these two forms of therapy seem to perplex most physicians.

The bibliography, which is appended, while not exhaustive is well chosen and will do much to overcome the limited discussion in the text if library facilities are available to the reader.

"Physical Therapy in Arthritis" can be recommended as an outline of the various physical therapeutic methods available at this time combined with a brief unbiased discussion of the methods.

R. O. M.

**CLINICAL LABORATORY DIAGNOSIS.** By Samuel A. Levinson, M.S., M.D., Director of Laboratories, Research and Educational Hospitals, Chicago, Illinois, etc., and Robert P. MacFate, Ch.E., M.S., Assistant Director of Laboratories, Research and Educational Hospitals, Chicago, Illinois, etc. Illustrated with 144 engravings and thirteen plates. Philadelphia: Lea & Febiger. 1937. Price \$9.50.

There are few better indices of the rising standard of medical practice than the ever increasing number of books on laboratory procedures and the interpretations of laboratory results. The publication of more new volumes on this branch of medicine is only partially attributable to the increase in the number of workers in our more numerous and better equipped hospital laboratories. The practicing physician himself is buying more laboratory books in order that he may fully understand and more efficiently utilize this important field of medicine. The tendency toward the performance of the simpler laboratory tests by the physicians themselves is a wholesome one, especially if he realizes the importance of controlling his standards, solutions and procedures.

Levinson and MacFate have attempted what appears to be the impossible: include every possible branch of clinical laboratory work and morphological pathology in one volume. For good measure they have thrown in a laboratory course and a brief description of the more common diseases.

They have performed a prodigious task. The methods are explained in a simple, easily understood manner. The volume in general is complete. But this attempt to be complete in general has prevented the authors from being complete specifically.

As much text space is devoted to the methods for the determination of blood potassium, pH, and oxygen con-

tent of the blood, as is devoted to blood glucose. It is perfectly true that it may take more space to describe a rarely used procedure than a commonly used one. But it might be well to omit such rare and difficult procedures and devote more space to the more common ones. In the determination of blood potassium at our laboratory where we have a full time biochemist and a full time organic chemist it took almost two months of steady work to standardize this test.

The critical evaluation of methods plays too minor a role in this book. As the volume will be bought chiefly by smaller laboratories, physicians and laboratory technicians, those to whom volumes on the special phases of laboratory work are not available it is important to indicate to them the degree of inaccuracy of the various tests as well as the pitfalls that may be encountered in their performance. It cannot be stressed too much that the complete faith with which so many physicians accept any and all laboratory reports makes it incumbent upon laboratory workers to be exceedingly careful with their procedures and openly indicate that certain methods, although the only ones available at present, give only approximate results.

Many of the methods described are not the ones widely used at present. The VanFurth and Charnass method described for lactic acid has been replaced by the method of Cotonio and Friedman and modified by West and Wendell. Only the Benedicts method for glucose is described. The Folin-Wu and the Schaeffer-Hartman-Somogyi methods are probably in greater use. These are but random examples.

On page 369 there is a flat statement that in duodenal ulcer penetrating the pancreas decreased amounts of diastase are found in the urine. This statement needs considerable qualification and cannot be proved by our present methods.

The book as a whole is very good. Some sections such as the toxicological one, are excellent and in a well condensed form. Its great mass of material in all phases of laboratory work may make it valuable as a quick reference as well as a manual of laboratory procedure.

S. H. G.

**SYNOPSIS OF GENITOURINARY DISEASES.** By Austin I. Dodson, M.D., F.A.C.S., Richmond, Virginia, Professor of Genitourinary Surgery, Medical College of Virginia, etc. Second edition. With 112 illustrations. St. Louis: The C. V. Mosby Company. 1937. Price \$3.00.

This book, as the author indicates in his preface, is an effort to catalogue the various aspects of genitourinary conditions together with a brief summary of recognized facts pertaining to each.

Apparently the book is not intended as a guide in the management of clinical cases but rather as a reference work. The book is clear, concise and well fortified by practical illustrations.

C. K. S.

**SYNOPSIS OF DIGESTIVE DISEASES.** By John L. Kantor, Ph.D., M.D., Associate in Medicine, Columbia University; Gastroenterologist and Associate Roentgenologist, Montefiore Hospital for Chronic Diseases, New York. Illustrated. St. Louis: The C. V. Mosby Company. 1937. Price \$3.50.

The author of this book is a nationally known, highly respected and capable man. He treats his subject matter in a clear, concise and easily understood manner; brief, but all inclusive.

The digestive disorders are classified and treated on the basis of (1) those due to constitutional digestive inferiority; (2) those due to acquired digestive disease, and (3) those due to extradigestive disease.

Diagnostic methods and special tests are enumerated and explained with notes on history taking and physical examination. A good outline of therapeutic meth-

ods is included. Each digestive disorder is defined and etiological factors are presented, symptoms enumerated, diagnosis outlined including differential diagnosis with the high lights of treatment.

The diseases of the liver, biliary passages and pancreas are ably handled.

The book is an excellent handy reference in all fields of medical practice and indispensable for the general practitioner.

E. R. D.

**A TEXTBOOK OF SURGICAL NURSING.** By Henry S. Brookes, Jr., M.D., Instructor in Clinical Surgery, Washington University Dispensary; Assistant Surgeon to Barnes Hospital. With 233 illustrations. St. Louis: The C. V. Mosby Company. 1937. Price \$3.50.

The reviewer has examined and used in the classroom several textbooks on surgical nursing in the last few years. This textbook by Dr. Brookes must be given a prominent place among the best of such texts. His arrangement of the subject matter is logical and well adapted to the use of student nurses. The language is clear, easily understood and not too technical. The surgical principles mentioned are quite in accord with the latest teachings regarding the various subjects discussed.

I find some similar texts overloaded with illustrations and minute descriptions of the author's pet operations, more suited to a postgraduate, surgeon's study than to a nurse's course or even to a medical student's needs. This author's illustrations are not of that type, each clearly portrays such proceedings as a student nurse needs to understand. I was pleased to see several methods of draping patients in the operating room well described and illustrated. Likewise instrument trays are photographed showing standard operating room setups for various operations.

The chapters on gynecological nursing are the best I have seen in any text. Giving an enema, proctoclysis, intravenous infusions, etc., are outlined in a brief concise manner and the methods of procedure and needs of each procedure are described.

Chapters on surgical diets, medico-legal duties of a nurse and an excellent glossary are also added. It is needless to add that the book is an excellent example of the printer's art, being printed in clear type on strong paper and is well bound.

This fine text of 636 pages can be recommended without reservations to students and graduates in nursing, and to medical students and surgeons as well, to refresh their conception of the varied and complicated nursing problems that are bound to occur in their patients. The reviewer has nothing but praise and commendation for this excellent book.

C. F. S.

**ARTIFICIAL FEVER Produced by Physical Means; Its Development and Application.** By Clarence A. Neymann, A.B., M.D., F.R.S.M., Associate Professor of Psychiatry, Northwestern University Medical School; Honorary Professor of Medicine, National University of Mexico; C. R. B. Exchange Professor to the University of Ghent, Liege, Louvain and Brussels, Belgium. Springfield, Illinois: Charles C. Thomas. 1937. Price \$6.00.

Almost daily the facilities for the induction of artificial fever are increasing throughout the United States. There seems to be no doubt that it represents a great therapeutic advance. For that reason this first text on artificial fever is exceedingly timely. It deals a considerable length with the basic theories and physiologic principles involved in the production of artificial fever. Its use in the treatment of syphilis in its various forms, its undoubted efficacy in the treatment of gonorrhea as well as many other conditions is discussed at considerable length. The only criticism that may be made



is that there is a tendency to didactic statement on a subject that is still highly controversial.

As many of the medical profession do not appreciate the value of artificial fever a few excerpts are given.

A recent compilation shows that 967 paretics have been treated by artificial fever in thirty-two reporting clinics. Of this number there was a complete remission in 27 per cent and marked clinical improvement in 36 per cent. Results of the present day treatment are even better. Neurosyphilis of the other varieties are even more amenable to treatment.

According to reports collected from twelve clinics in 590 cases of acute and chronic gonorrhea 79 per cent were cured and 5 per cent greatly improved where ordinary treatment was supplemented by artificial fever.

In a study of 384 cases of chronic infectious arthritis, collected from many sources, artificial fever brought complete relief to 11 per cent, marked relief to 24 per cent and moderate improvement in 28 per cent of the total number. Earlier recognition will improve these figures.

Many observers believe that the results in early syphilis may be greatly improved if the usual treatment is supplemented with artificial fever. In a series of cases, the Wassermann became negative in an average of forty-three days, and remained negative for an average of eleven months without change or reversal in a single instance.

The work is supplemented by an extensive bibliography which in itself lends the volume great value. The book is unhesitatingly recommended to general practitioners and specialists of every variety. L. J.

## COMMERCIAL ANNOUNCEMENT

### OPPORTUNITY FOR PHYSICIANS TO TOUR AMERICA EN ROUTE TO A. M. A. CONVENTION

The thought that the forthcoming A. M. A. Convention in San Francisco, June 13 to 17 is such a splendid opportunity for a tour of the United States has inspired definite action. The cooperation of more than twenty-five state medical societies has made it possible to arrange a special train tour which will include such outstanding highlights of the North American continent as the Indian Detour, the Grand Canyon, Los Angeles, Riverside and Santa Catalina Island—on the way out to San Francisco. A choice of two return routes is possible, one of which visits the charming cities of Portland, Seattle, Victoria and Vancouver and the beautiful scenic spots of the Canadian Rockies; the second route travels via Yellowstone National Park, Salt Lake City, Royal Gorge, Colorado Springs, and Denver.

There is an all-inclusive price for this tour which includes transportation from home-town to home-town, though the tour starts officially at Chicago on Monday, June 6, from which point an American Express escort joins the group, as this travel company has been appointed transportation agent and the business details of the trip are in their capable hands.

The first day out of Chicago, racing across the broad, wheat-growing face of Kansas, we become acquainted with our traveling companions, physicians from other states, their families and friends. We first leave our train at Lamy, New Mexico, to enter the Indian Pueblo district by motor-coach. We spend a whole day exploring the traces left by a vanished civilization on this continent, visiting Santa Fe, Tesuque, Puye and Santa Clara Pueblo.

The next morning's arrival at the Grand Canyon will remain in our memories forever. The vast chasm,

4 to 18 miles wide from rim to rim gives us stupendous vistas of awe-inspiring beauty, unparalleled the world over.

The golden, amazing city of Los Angeles is next on our itinerary, and our sight-seeing trips acquaint us with its Spanish Quarter and Chinatown, as well as its beautiful environs, including flowering Pasadena. On our third day in California we sail to beautiful Santa Catalina Island, playground of this land of the sun.

Supposing we had chosen Return Route No. 1. We shall visit Portland, Oregon, famed as the city of roses, and enjoy a drive along the noted Columbia River Highway. Seattle is next, and then the Canadian part of our journey begins, and we sail by comfortable steamer to the cities of Victoria and Vancouver, where we do sight-seeing. Now a train takes us into the enchanting scenic regions of the Canadian Rockies, and we stop at Chateau Lake Louise, at the lake of the same name—a gem of exquisite color. Our drives through the heart of the Rockies takes us to Moraine Lake, the Valley of Ten Peaks, Johnson Canyon and finally to Banff, where we make another stopover. After additional sight-seeing around Banff, we entrain for Chicago.

Return Route No. 2 takes us to Chicago in a more southerly route. A three and one half day tour of Yellowstone National Park is one of the high lights of this tour. Ranger naturalists conduct our party to the geysers and hot pools and we feast our eyes on Old Faithful in its hourly eruption. We also see the Grand Canyon of the Yellowstone and Mammoth Hot Springs. Salt Lake City gives us an opportunity to visit Saltair Beach on Great Salt Lake, also the Great Copper Mills and Smelters. Our next call is at Colorado Springs, the noted health and pleasure resort. Our travels in the Rockies take us up to the summit of Pike's Peak, to the Garden of the Gods, to Seven Falls and finally to Denver. This lovely city is a center for outings in the Rockies and we are soon off on a sixty-five mile tour of Denver Mountain Parks including Memorial Museum and Tomb of Buffalo Bill of western fame. From Denver we travel to Chicago.

The above is barely a glimpse of the outline of the tours but it is hoped that some idea has been given of the enjoyable travel awaiting those physicians and their families and friends who wish to combine attendance at the Convention with an interesting journey and a happy vacation.

### YELLOW BONE MARROW EXTRACTS IN GRANULOCYTOPENIA: PRELIMINARY REPORT

Up to the present time an extract from yellow bone marrow free of the large amount of fat that is present in the refined marrow has been administered to twenty patients with granulocytopenia. Such a concentrate was prepared by C. M. Marberg and H. O. Wiles, Chicago (Journal, A. M. A., Dec. 11, 1937), by extracting the unsaponifiable portion of the marrow and dissolving it in a bland oil for oral administration. The equivalent concentration of 2 Gm. of marrow per drop has been found quite satisfactory for clinical use. In all but seven of the twenty patients there has been a rise in the number of granulocytes, usually with a return to normal figures. In fact, if active infection persists during the period of treatment the granulocytes may rise to figures far above normal. Of the seven patients who did not give a satisfactory response, two were later found to have aplastic anemia; in four a differential diagnosis was not made, and the last had diabetes and appendicitis in addition to the granulocytopenia. The rise in granulocytes usually begins within from twenty-four to thirty-six hours, as contrasted with the effect of pentnucleotide, which is not usually manifested in less than from four to five days. Flipse has obtained similar results in several cases.

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### THE MANAGEMENT OF INFECTIONS OF THE NECK AND THEIR COMPLICATION: MEDIASTINITIS

HERMAN E. PEARSE, JR., M.D.  
ROCHESTER, NEW YORK

The great majority of infections of the neck are of such a simple nature that they rarely arouse much interest or enthusiasm; usually they are due to a circumscribed process that either subsides spontaneously or suppurates to form a simple abscess. This is because the inflammation remains in the structure of its origin, usually a cyst, salivary gland or lymph gland, and being limited causes no harm. The cervical lymph glands are most commonly at fault, which is not surprising in view of the highly infected areas of the nose, mouth, pharynx and ears that they drain. These cervical infections are not dangerous so long as they remain in their original site for they continue as self-limited or simple suppurative processes. In fact, so common is this sequence of events that we are apt to view all cervical infections as benign lesions to be treated conservatively with compresses or observed until fluctuation occurs, forgetting that in some instances the process may be quickly lethal unless combated by well executed surgery. The real necessity is to distinguish the manifestations of the two types early enough to give appropriate therapy, for it is just as injudicious to operate radically upon the localized infection as it is to withhold operation after involvement of a fascial space. Fortunately, the innocuous localized process is not only ten times as common as the dangerous space infection, but also may be readily differentiated from it on a basis of the signs and symptoms produced. The latter depend upon the involvement of anatomical structures by the inflammatory process and if viewed in this way are much simpler to interpret.

As an example of a localized cervical infection, consider the symptomatology of a lymphadenitis in

the submaxillary region. A tender, painful, circumscribed swelling appears in this triangle which is discrete and limited to the involved area. Redness or fluctuation may be present over it. But there are no changes in adjacent structures for the submental triangle and the submaxillary region of the opposite side are free from edema, swelling or tenderness. The jaw moves easily and the mouth may be opened widely or closed completely. The floor of the mouth is not edematous nor the tongue elevated. The tongue can be protruded without pain, speech is normal and respiration is unimpaired. This circumscribed involvement is also seen in infection of a salivary gland, dental abscess, mandibular periostitis, inflammation of a thyroglossal or branchiogenic cyst or in fact any cervical infection which is confined to the structure in which it originates. But when it breaks into or invades a fascial space a diffuse infection follows that affects adjacent structures to the point of giving symptoms from their involvement. Let us contrast the result of the submaxillary lymphadenitis described above with that of invasion of the submaxillary-submental space, known as Ludwig's angina.

#### LUDWIG'S ANGINA

This clinical picture results from a diffuse cellulitis in a closed space and as such constitutes a pathological entity. Both Colp<sup>1</sup> and Dabney<sup>2</sup> felt that the term Ludwig's angina was a misnomer for the process was described prior to Ludwig, but I am inclined to agree with Thomas<sup>3</sup> who "believes that the time has not yet arrived when we can conveniently discard it." The name has been used to designate a characteristic syndrome that results from involvement of anatomical structures and to substitute such terms as "submaxillary and sublingual space infection," or "submaxillary cellulitis with extension to the mouth and throat," would be both awkward and confusing. It is sufficient if we appreciate the anatomical cause of the symptoms.

The initial lesion may be about the jaw following dental manipulation or infection or it may be in the submaxillary triangle; but soon there follows diffuse enlargement of the neck from swelling of the submaxillary and submental regions associated

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with tenderness of these areas. In addition edema of the floor of the mouth and limitation of motion of the jaw may be the only signs present in a case seen early in the disease. But as the condition progresses the neck becomes indurated with a hard brawny swelling which is extremely tender to touch yet without signs of fluctuation in it. The skin is edematous, shiny and tense but usually not reddened. The tongue is pushed against the palate and protruded between the teeth by the swelling under it causing the mouth to be held open so that saliva drools out. The pressure may be sufficient to cause indentation of the tongue by the teeth. The floor of the mouth is edematous, particularly in the glossomandibular sulcus, so that the normal contour is obliterated. The jaw cannot be opened, the tongue is immobile, speech is guttural and respiration labored. This alarming picture is ominous enough to arouse concern in anyone who sees it. But when the condition progresses to this state the mortality is much higher than when it is properly treated in the beginning. So it is preferable to bear in mind the cardinal signs of early involvement; namely, swelling and tenderness in the submental and submaxillary triangles, immobility of jaw and tongue and edema of the floor of the mouth in order to diagnose and treat the infection in its most favorable stage.

The surgical treatment of Ludwig's angina rests on the principle of release of pressure within the closed submaxillary-submental fascial space. From figure 1 it is seen that the intra-oral part of this space is horseshoe-shaped and largely filled with the salivary glands, the submaxillary gland being in the position of the calk on the horseshoe. The tongue lies inside, the mandible and the pterygoid muscle outside, this semicircle with the parapharyngeal spaces and pharynx just beyond it. An additional part of the space lies beneath the tongue between the attachments of the geniohyoid muscle.

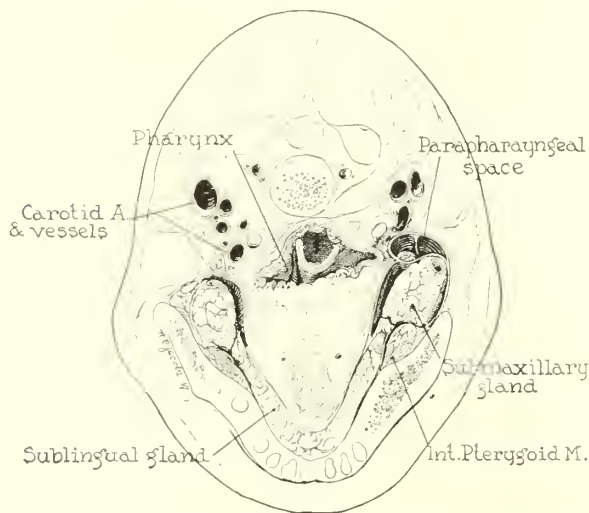


Fig. 1. Section through mouth to show the salivary glands in the sublingual-submaxillary space that lies in close relation to the pharynx and parapharyngeal space.

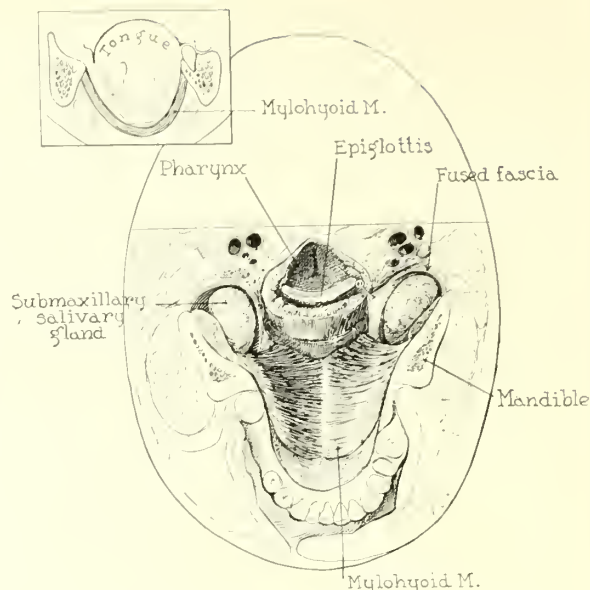


Fig. 2. Section through mouth with tongue removed to show sublingual-submaxillary space which is involved in Ludwig's angina. Note how the mylohyoid and fused fascia make a horseshoe-shaped compartment in close relation to the pharynx.

This is shown in figure 2 where the whole intra-oral part of the space has been uncovered by removal of the tongue and geniohyoid. Here one sees the mylohyoid muscle forming an impermeable barrier on the floor of the mouth. Behind it is the submaxillary space which curves around the end of the muscle to have both an intra-oral and cervical portion. Its wall, known as the fused fascia, is absent in front so there is direct communication with the submental space above the mylohyoid. It is apparent that if the submaxillary space is opened in the neck then continuation of the incision forward will cut across the fibers of the mylohyoid muscle and so open the floor of the entire space. This drains the infection and by relieving the pressure meets the indications for treatment.

After dissecting this region one is tempted to drain through the floor of the mouth to avoid external incision. This never works well for local anesthesia is difficult, exposure is inadequate and drainage poor. Colp<sup>1</sup> and others advocate excision of the submaxillary salivary gland as a part of the operation for external drainage. This would appear to be unnecessary if the mylohyoid muscle is divided. Alden<sup>2</sup> feels that many of the cases of Ludwig's angina of dental origin are due to a Vincent's infection and he has found neoarsphenamine a valuable adjunct to treatment. Most clinicians, however, report a majority of the cases due to streptococcus involvement which coincides with our experience.

The complications of Ludwig's angina are most frequently due to a combination of toxemia from the infection and respiratory obstruction. The

latter is caused by two factors, first the pushing up of the tongue to occlude the airway and, second, laryngeal edema from direct extension of the infection. Both of these will be relieved by adequate release of pressure from free drainage which must be done under local anesthesia to prevent the added burden of a general anesthetic in a patient who already has respiratory embarrassment.

The dependent spread of infection into the mediastinum is only a remote danger in these cases. It may occur by a rupture of the wall of the space along the anterior fascial vein and tracking of the infection down the carotid vessels.<sup>5</sup> Another method of spread is by rupture into the parapharyngeal space and so down the vessels into the mediastinum. Occasionally in neglected cases pus may rupture into the pharynx. But all these methods of spread are infrequent because the patient is either overwhelmed by the infection or adequately treated before they have a chance to occur.

#### PARAPHARYNGEAL SPACE INFECTION

This space is ordinarily described as a triangular cone-shaped compartment with its base at the skull and apex on the carotid sheath, being bounded medially by the pharynx and tonsil, laterally by the internal pterygoid muscle, mandible and parotid gland and posteriorly by the prevertebral fascia. The styloid process and muscles are said to divide it into a prestyloid and retrostyloid compartment, the latter containing nerves, vessels and lymph glands. Anatomical dissection and clinical experience have failed to be convincing of this division, for though the prestyloid compartment is real, the retrostyloid one is only apparent and though an abscess from jugular thrombophlebitis or suppurative adenitis may occur here, it does not appear to occupy a fascial space.

In figure 3 the prestyloid part is drawn as it occurs in dissection. From this drawing it is apparent how the space may be infected by extension into it from a parotid, retropharyngeal or peritonsillar abscess. Puncture of the space by the needle in doing a tonsillectomy under local anesthesia is probably the commonest cause of infection and the

same may hold in tooth extraction under nerve block. The possible invasion of this space in Ludwig's angina has been mentioned. Occasionally it is involved from dental abscess occurring in the second and third molars.

The clinical picture presented by distension of this space with pus may also be inferred from figure 3. The pharynx and tonsil will be pushed medially while the parotid will be thrust laterally. Irritation of the internal pterygoid muscle will cause trismus. Pressure posteriorly on the jugular vein will give cyanosis and distension of the superficial veins. These signs are characteristic so should not be confusing. In the event that chills or sepsis occur a jugular thrombosis should be suspected.

The treatment of choice is early and complete drainage, the only question being the approach to use. If the infection occurs after tonsillectomy, then incision through the tonsillar fossa is indicated. Some surgeons prefer this route even though it may be necessary to take out the tonsil as a preliminary measure. External approach may be modified to go through the submaxillary space (Moshier<sup>6</sup>), or to pass in front of the parotid (Iglauder<sup>7</sup>), behind the parotid (Kramm<sup>8</sup>) or above the parotid (Coller and Yglesias<sup>9</sup>). The route chosen will depend upon the personal preference of the operator in view of the circumstances of the individual case and, so long as free drainage is established, the indications for operation will be met.

Infection in the parapharyngeal space may gravitate down along the great vessels to enter the chest, but there is some confusion as to just how this occurs. I have never seen a "carotid sheath" filled with pus but have encountered infection gravitating down medially and anteriorly to the vessels. It was felt that the pus here was burrowing along the loose areolar tissue beside the vessels rather than running down a closed sheath. In case there is descent of the infection in the neck from the parapharyngeal space, warning is given by a rise in temperature and pulse and by marked tenderness over the course of the vessels. Redness and swelling are often absent so should not be counted on in making the diagnosis.

Another pathway of pus from the parapharyngeal space to the mediastinum is by rupture of the pus into the retropharyngeal space and so by direct continuity down the retrovisceral (retroesophageal) space. When this happens it is very hard to detect in time to prevent mediastinitis as was learned to our sorrow in one patient with peritonsillar, parapharyngeal infection who developed mediastinitis without showing any signs in the neck. Fortunately this is a rare exception to the usual course which gives warning of the impending danger.

#### RETROPHARYNGEAL ABSCESS

The space behind the pharynx is only the upper part of a long space that extends into the chest

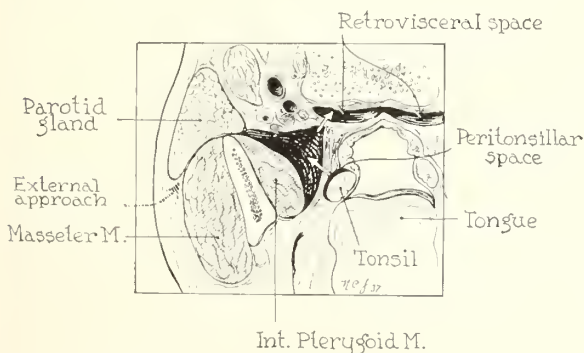


Fig. 3. The parapharyngeal space may be invaded from a tonsillar, parotid or retropharyngeal infection. Pus from this space may track down the carotid sheath or rupture into the retrovisceral space to involve the mediastinum.



behind the esophagus known as the retrovisceral space. At first glance one might wonder why retropharyngeal abscesses remain so localized in this free space but when it is recalled that they begin as a suppurative lymphadenitis it is apparent that the slow development of the inflammatory process allows sealing off of the area from the lower part of the space. Most<sup>10</sup> has shown that in the infant lymph glands are present on either side of the retropharyngeal space which drain the nasopharynx so, with infection there, the glands may suppurate. This correlates well with the known association of the abscess in infants with upper respiratory infection.

The signs of retropharyngeal abscess are produced by obstruction of the pharynx causing dysphagia and respiratory distress. This mechanism is illustrated by figure 4 where an abscess is shown occluding the pharyngeal lumen by pressure from behind. The abscess is easily drained without anesthesia by inserting a clamp into it with the patient's head held down to avoid aspiration of pus.

It has been mentioned that the typical retropharyngeal abscess develops slowly enough to localize the infection in the upper part of the retrovisceral space, but should the tension be sufficient to break this barrier there is nothing to prevent gravitation into the chest with a resultant mediastinitis. Traumatic perforation of the pharyngeal wall by a sharp foreign body, such as a lollipop stick, may give a portal of entry into the mediastinum by way of the retrovisceral space.

One has to bear in mind that some retropharyngeal abscesses are tuberculous in origin from paravertebral abscess of cervical Pott's disease eroding through the prevertebral fascia. These should be

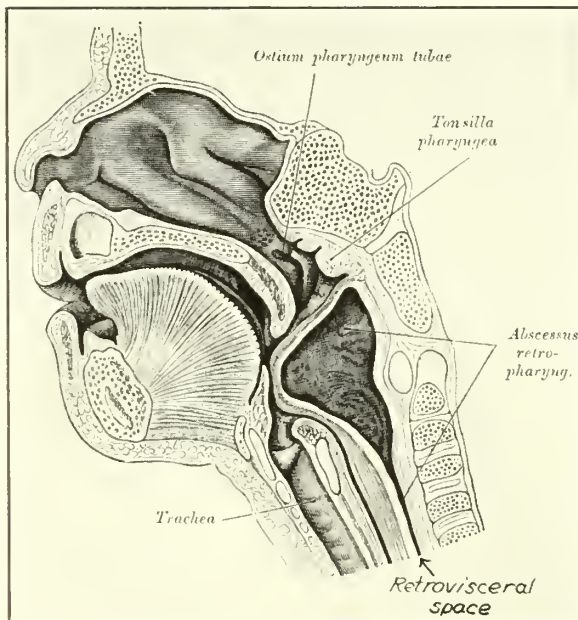


Fig. 4. Drawing from Zuckerkandl's anatomy showing how a retropharyngeal abscess mechanically occludes the pharynx. Note the relation to the retrovisceral space.

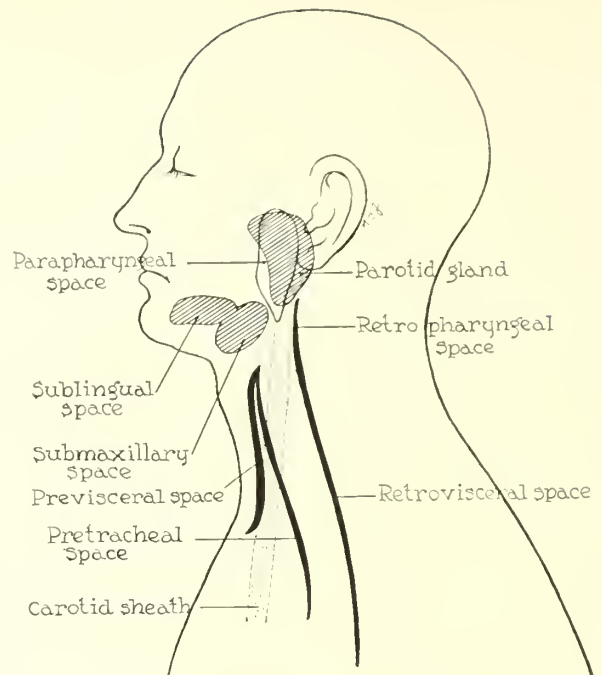


Fig. 5. The topography of the fascial spaces.

drained through the neck to avoid the contamination with mouth organisms that would occur if opened through the pharyngeal wall.

#### THE FASCIAL SPACES

The paths of spread of infection from the neck to the mediastinum have been mentioned as being the most important link in the production of a fatal mediastinitis from a gravitating infection. Much of the knowledge of these pathways has been contributed by Moser,<sup>6</sup> Furstenburg,<sup>12</sup> Iglaue<sup>7</sup> and Collier and Yglesias.<sup>9</sup> It has been assayed by personal experience from clinical observation and anatomical dissection with emphasis placed on the importance of the part played by the retrovisceral space.<sup>13</sup>

In figure 5 the cervical fascial spaces and the carotid sheath are shown topographically and in figure 6 they are illustrated somewhat diagrammatically in cross section. Reference to these figures will be helpful in clarifying the following description.

**Previsceral Space.**—This compartment lies beneath the strap muscles and in front of the thyroid gland. It is the space used by the surgeon in freeing the thyroid gland at operation. Above, it ends where the sternothyroideus attaches to the thyroid cartilage, trachea and thyroid gland and, below, it is closed by a process of the pretracheal fascia which attaches to the sternum. (Furstenburg.) This important attachment blocks infection in this space from reaching the mediastinum so it is unimportant as a path of spread to the chest.

**Pretracheal Space.**—Beneath the posterior leaf of the pretracheal fascia that covers the thyroid

and the trachea and esophagus is a space which extends from the larynx above to the pericardium below. It has no connection with the spaces in the floor of the mouth or those about the pharynx so does not convey infection from them. Some authors believe that peritonsillar or parapharyngeal space infections may enter the pretracheal space but direct demonstration of this by experimental or clinical observation is lacking. My personal experience has not included such an instance. On the contrary the infection from these locations have followed down the carotid artery or passed into the retrovisceral space.

The pretracheal space is usually opened during the course of a thyroidectomy and should infection follow the operation it may gravitate into the chest by this channel. I have known of one case of mediastinitis from this cause.

In order to do a tracheotomy it would seem that the pretracheal space would be contaminated yet no instance of chest infection following this has been found. Theoretically it should happen but actually it rarely or never does, which may be accounted for on the supposition that the space is usually obliterated by a fusion of the fascia about the isthmus of the thyroid gland and tracheotomy is usually done just above or below this structure so that the free space is not opened at operation. This is a rather weak explanation of the paradox.

**Retrovisceral Space.**—Between the buccopharyngeal fascia in front and the prevertebral fascia behind is a large space that is bounded laterally by the carotid sheath and extends from the base of the skull to the bifurcation of the trachea. Its lower limit is usually at the level of the sixth dorsal

vertebra where it is closed by the fibrous tissue about the tracheal bifurcation. Below this obliterated portion the space continues to the diaphragm but this part is unimportant in cervical infections.

In front of the retrovisceral space is the pharynx above and the esophagus below with only the thin layer of the buccopharyngeal fascia separating them. Perforation of the posterior wall of either pharynx or esophagus may allow direct contamination of the space with mouth organisms giving a rapidly fatal mediastinitis unless actively treated. The upper part of the space is the seat of retropharyngeal abscess and should the protective wall around it rupture there is a clear passage to the mediastinum for the infection. Less frequently, as has been mentioned, the retrovisceral space may convey pus into the chest from a parapharyngeal abscess, peritonsillar abscess or Ludwig's angina, but the infection from the latter two most usually traverse the parapharyngeal space in order to reach the retrovisceral compartment.

**Carotid Sheath.**—There is some difference of opinion as to how much importance should be attached to this route of dependent spread of infection. Moser<sup>6</sup> says, "the carotid sheath . . . is the natural highway for pus and for the surgeon in pursuit of pus." Parsons<sup>15</sup> on the other hand does not think the carotid sheath exists until it is "manufactured . . . with the scalpel." It is probable that the infection follows the loose areolar tissue about the vessels but is not confined in a closed sheath.

The parapharyngeal space ends in a cone about the carotid artery and jugular vein and infection in it may track down beside these vessels. Paulson<sup>5</sup> showed that pus from a Ludwig's angina might rupture through the submaxillary fascia at its point of perforation by the anterior facial vein and follow this vessel down to the carotid. Perhaps more important causes of infection in the region of the great vessels of the neck are suppurative adenitis of the deep glands and thrombophlebitis of the jugular vein.

#### PERFORATION OF THE CERVICAL ESOPHAGUS

From the foregoing it is apparent that the retrovisceral space is the most important means by which cervical infection gravitates into the chest. Of all the methods of contamination of this space that by perforation of the cervical esophagus is the most rapidly fatal. The explanation for this is probably that with repeated swallowing food, fluid, air and bacteria are forced through the perforation to give a mechanical distension of the space. Thus in a matter of hours it may become forcibly filled with infected material. A study of this problem in conjunction with Dr. Heatly<sup>13</sup> led to the belief that cases of posterior perforation of the cervical esophagus should have immediate operation. A procedure was devised<sup>14</sup> for this purpose, the object of which was to block the retrovisceral space. Nature had imposed no transverse

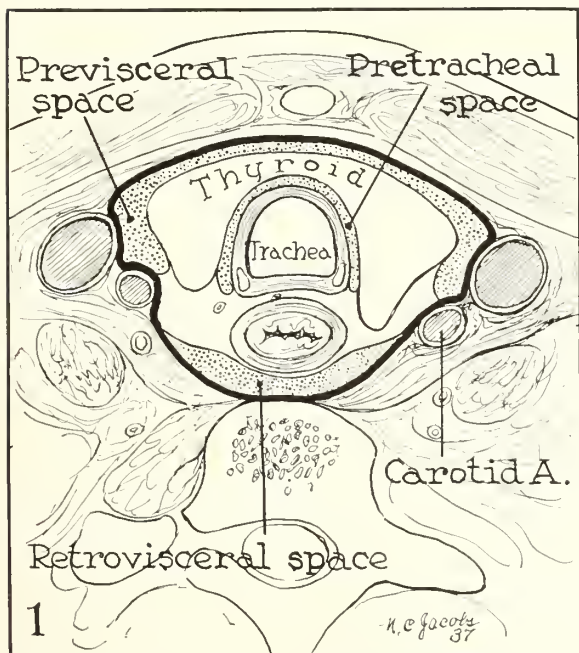


Fig. 6. Section through neck showing the fascial spaces. Note the relation of the retrovisceral space to the cervical esophagus.



barrier between the neck and the chest in this location so it was thought the surgeon might do this by obliterating the space. This has been successful in the cases seen soon after perforation of the esophagus.

#### MEDIASTINITIS

It was not long after beginning our efforts to prevent the gravitation of pus into the chest that a case was found at operation to have mediastinitis already developed. What was to be done? On the one hand was the prevailing opinion that mediastinal infection was lethal. In fact a recent textbook of surgery states "a gross mediastinitis, arising from perforation, is almost necessarily fatal."<sup>16</sup> But on the other hand the operator had already opened into the infected area so it appeared reasonable to drain it. Fortunately the patient recovered so that impetus was given for further study of the subject. It was found that in 1916 Gaudiane<sup>17</sup> had collected ten cases of cervical drainage of mediastinitis with recovery in seven of the patients. Later Furstenberg<sup>12</sup> had reviewed the matter and decided that drainage through the neck was a suitable procedure in selected cases. The literature was reviewed, anatomical dissections were made and additional clinical experience has been gained with the result that some general principles may be laid down as a guide in this therapy.

The upper mediastinum, that above the bifurcation of the trachea or the attachment of the pericardium to the great vessels, is best drained through the neck. This is particularly true if pus has run down from the cervical region for by tilting the patient into a Trendelenburg position it may be made to run out. But direct dependent drainage must be obtained. This means keeping the patient's head down until drainage diminishes or ceases. Failure to do this will permit formation of a residual abscess. If the infection has dependent pockets on either side of the midline, they must be drained through separate incisions on the corresponding sides of the neck. A drain crossing the midline is pinched between the vertebral body and the esophagus causing obstruction of the drainage

and abscess formation. The incision in the neck may go anterior or posterior to the sternocleidomastoid muscle. The anterior approach has been used for exploration.

Patients with mediastinal infection are sick so they need much supportive treatment such as intravenous and subcutaneous infusions of saline or glucose, blood transfusion and oxygen by tent. Feeding may be a problem if the infection originated from a perforated esophagus for which a nasal tube may be used but as a rule gastrostomy has been the most satisfactory method. Artificial feeding is continued until drainage from the mediastinum stops then liquids and soft solids are tried before removing the gastrostomy tube. Should one suspect an esophageal fistula the giving of a drink of dilute methylene blue solution will prove the point by its appearance on the dressings of the neck. In cases of perforated esophagus no difficulty has been encountered from persistent fistula or stricture.

In figure 7 are contrasted the appearances of the chest roentgen rays during the midst of an acute suppurative mediastinitis and after recovery from it. During the infection the mediastinal shadow is broad and dense since it is the site of the purulent process, but one also notes a hazy clouding of the lung fields. This is apparently due to a pleural reaction with edema and may vary greatly in different cases from a minor degree of cloudiness to a frank pleurisy with sterile straw-colored fluid. It always clears rapidly with subsidence of the mediastinitis so has never given any trouble.

#### SUMMARY

In this discussion an effort has been made to contrast the diagnosis, treatment and complications of the simple, localized cervical infection and those that are dangerous because of their tendency to spread. It was pointed out that the latter consisting of Ludwig's angina, parapharyngeal abscess, retropharyngeal abscess and retrovisceral cellulitis were examples of infection in fascial spaces and so spread according to the anatomical arrangement of the part.

A short discussion of the management of mediastinitis is given to show that with prompt recognition and treatment of this disorder it is not the hopeless affliction we have supposed but rather is amenable to cure.

University of Rochester School of Medicine and Dentistry.

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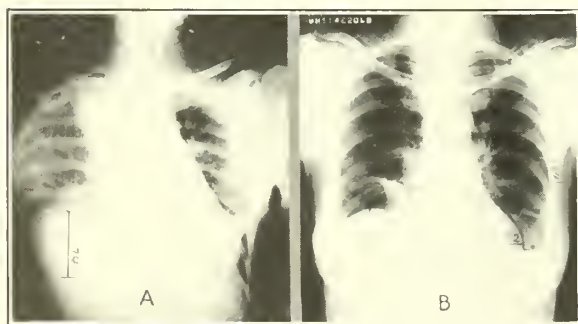


Fig. 7. (A) Showing the appearance of the chest roentgen ray four days after perforation of an esophageal diverticulum at a time when the mediastinitis was at its worst. Note the dense shadow of the upper mediastinum as well as the hazy appearance of the right pleura. (B) The process has completely cleared.

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## THE DIAGNOSIS AND OPERABILITY OF ACUTE INTESTINAL OBSTRUCTION

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Acute intestinal obstruction is one of the most serious intra-abdominal catastrophies that can befall a patient. Unless the obstruction is relieved the mortality is 100 per cent. Most cases can be diagnosed and treated with ease. Occasionally, however, they do test one's diagnostic acumen and surgical ability. The purpose of this paper is to clarify the essential diagnostic findings, and to point out whether or not a surgical exploration should be made.

Intestinal obstruction, in the broad sense, applies to any interference with the progression of the intestinal current. Etiologically, it can be divided into three main groups (Christopher<sup>1</sup>): (1) Mechanical, as in strangulated hernia and postoperative adhesions; (2) neurogenic, as in paralytic ileus due to shock or peritonitis, and (3) vascular, as in mesenteric thrombosis or embolus.

Most cases fall in group one, and when we speak of intestinal obstruction we usually imply that it is of mechanical origin. In a pathological classification, there is the simple obstruction in which there is a paralysis of the bowel due to shock or toxemia, and the strangulated obstruction in which there is an interference with the blood supply to that portion of the intestine. The latter condition only requires surgical intervention.

In considering the early diagnostic signs of an acute mechanical intestinal obstruction the first symptom is pain. It is intermittent and crampy in character simulating a "gas pain." This pain is termed intestinal colic. It is caused by the active peristaltic intestinal wave meeting a point of obstruction. Occasionally, in early obstruction in a patient having a thin abdominal wall, this peristaltic wave is visible. However, the most accurate

method of determining the presence of intestinal colic is by prolonged auscultation of the abdomen with the stethoscope. At the height of the intermittent pain of which the patient complains, one hears a gurgling, bubbling, tinkling noise—the peristaltic intestinal wave meeting the point of obstruction. To designate this metallic like tinkle from other intestinal sounds Vaughan<sup>2</sup> has coined the phrase "Obstructive Borborygmus." Thus we have the so-called "noisy abdomen of mechanical obstruction" in contradistinction to the "silent abdomen of paralytic obstruction." It is true that you can hear these same intra-abdominal sounds in a patient who is suffering from enterocolitis or some food allergy, but the sounds do not repeatedly occur at the same time that the patient complains of the pain. All other signs may fail, but if the patient has a surgical condition in the abdomen due to an early mechanical obstruction, intestinal colic must be present.

The next most common finding is nausea and vomiting. It is due to the accumulation of gas and fluid above the site of the obstruction. However, one should not wait for the appearance of frequent and copious vomiting to make a diagnosis of intestinal obstruction because, in a low obstruction of the small intestine, this may be delayed for many hours and, in an obstruction of the large intestine, there may be an enormous distention without vomiting. This is readily understood when one recalls that the ileocecal sphincter is a one way valve permitting fluid and gas to pass from the small intestine to the large intestine, but not in the reverse direction. Sperling<sup>3</sup> has shown that the ileocecal sphincter is competent to withstand pressures within physiologic limits (pressures of from 10 to 50 cm. of water) which conceivably might occur in the course of obstruction of the large bowel. A competent ileocecal sphincter at once converts a simple type of obstruction into a closed loop with all the inherent dangers of strangulation due to increased intra-enteric pressure. Experimentally, the effect of such sustained pressures is shown by the development of areas of hemorrhagic necrosis in the colon of dogs. That similar changes occur in the human colon is evident from a perusal of the literature. The term "ileocecal valve" is a misnomer; the organ is more rightly called the ileocecal sphincter. It is subject to definite nervous control and its competency depends on the tonicity of the fibers of the sphincter. That the tone of the sphincter is increased by stimulation of the sympathetic nerves is confirmed experimentally. Also, it has been shown that the stimulation of the distal part of the colon increased the back pressure resistance of the sphincter to approximately three times that of the normal sphincter. Stimulation of the parietal peritoneum, the stomach or the small bowel had no such effect. It is conceivable that the resistance of the ileocecal sphincter to back pressure is greatly increased in cases of intrinsic pathologic conditions of the colon. Stimulation of the

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distal portion of the colon, acting through Auerbach's plexus, increases the tone of the ileocecal sphincter making it more competent.

A rather constant finding is abdominal distention, depending upon the duration of the obstruction. Early in the course of a gradual obstruction it may be absent or, in those cases of complete, sudden strangury, the distention may be delayed for hours. Distention occurring in the higher levels more readily causes compression of the blood vessels against the muscular layer, producing intramural vascular strangulation.<sup>4</sup> As early as 1922 Wagner<sup>5</sup> suggested that lumbar anesthesia might be used as a diagnostic procedure in intestinal obstruction for differentiating the simple from the mechanical type because of the beneficial results which he had obtained following the use of lumbar anesthesia in the treatment of these cases. Recently Willard Bartlett, Jr.,<sup>6</sup> and W. J. Mayo<sup>7</sup> have again suggested such a procedure as a diagnostic aid. The employment of splanchnic block either as a lumbar analgesia or as a spinal analgesia is not reliable in differential diagnosis as is shown by Duval's<sup>8</sup> series of cases. He found that an evacuation of the intestines was produced in 16 per cent of the cases of mechanical obstruction in which lumbar analgesia had been performed. However, splanchnic anesthesia may be of distinct value clinically in the so-called simple or paralytic obstruction in which, in spite of drainage by means of an enterostomy or decompression, the toxemia persists because of the paralysis of the intestinal musculature with an inability of the intestine to expel its contents. In a certain percentage of these cases at least, this condition is due to inhibitory impulses supplied the intestine by the sympathetic system.

Old textbooks teach us that obstipation is a sign of bowel obstruction. This is true, but it may be a late sign, especially in a high obstruction. An occlusion of the terminal ileum can still leave the entire large intestine full of feces and gas. Therefore, in the presence of a complete obstruction a patient may still have a normal bowel movement, or, as the nurse may report, a "good result" from an enema. Wagensteen and Goehl<sup>9</sup> proved experimentally that following complete obstruction the administration of enemas invariably resulted in an evacuation of the distal portion of the intestine, demonstrating that bowel evacuation either occurring spontaneously or induced by enemas does not eliminate intestinal obstruction as the cause of the symptoms.

The roentgen ray is a godsend to the surgeon and a life saver to the patient. Flat roentgen ray plates were first advocated by Schwarz<sup>10</sup> in 1911. A flat roentgen ray plate of a normal abdomen shows the presence of gas in the stomach and large intestine, but none in the small intestine because of the active peristalsis continuously mixing the gas and fluid. If intestinal stasis occurs in the small intestine, fluid and gas separate and the gas should be

visualized on the roentgen ray film. Whereas the presence of gas visualized in the roentgen ray plate is of diagnostic value, it is considered by many observers<sup>11</sup> that the finding of multiple fluid levels (demonstrated by obtaining the roentgen ray in such a way that the junction between gas above and fluid below may be visualized) is of greater diagnostic importance. Ochsner<sup>12</sup> found in experimental animals that in the high jejunal obstructions little difference could be detected, in the films taken in the horizontal position, between the simple and strangulated obstructions, but in the roentgen rays obtained with the animal in the upright position there was considerable difference in that 50 per cent more fluid levels were present in films of animals with strangulated obstruction than in those with simple obstruction. The earliest appearance of gas accumulation or fluid levels, both in the simple or strangulated obstruction, was three hours after the onset of the obstruction. In obstructions of the ileum, there was considerable difference between roentgen rays obtained from animals with strangulated and simple obstructions. The films of the animals with an associated strangulation showed evidence of gas accumulation and fluid level formation within one to two hours after the obstruction, whereas in the films of animals with simple obstruction the earliest evidence of gas accumulation was five hours, which, however, did not become very marked until from seven to nine hours after the obstruction. Similar results were obtained in strangulated obstruction of the sigmoid. In comparing the roentgen rays taken in the horizontal position and those taken with the animal in the upright position, there was relatively little difference except that possibly gas alone without the evidence of fluid could be demonstrated earlier than gas and fluid. However, the findings of gas and fluid as evidenced by multiple fluid levels are so definite and pathognomonic it is believed that when it can be demonstrated it is of much more diagnostic importance than gas alone. Theoretically, the roentgen ray should be 100 per cent accurate in showing distended loops of intestine above the obstruction and absence of gas in the collapsed intestine below the obstruction. A single roentgen ray of the abdomen of a patient with a clinical intestinal obstruction should differentiate between obstruction of the small intestine and that of the large intestine. Roentgen ray findings of a markedly distended colon and dilatation of the cecum with no visible loops of small bowel should clinch the diagnosis of obstruction of the sigmoid flexure. The roentgen ray is the only accurate method of determining the degree of distention and the segment of bowel involved. They cannot always differentiate between a mechanical and a paralytic obstruction, a complete or a partial obstruction, especially if some air has been left in the large intestine from a recent enema, and in certain early cases of complete obstruction.

A practical diagnostic aid in differentiating a par-

tial from a complete obstruction is to give the patient two ounces of mineral oil. If oil droplets are found in subsequent enemas the obstruction is not complete.

The pulse, temperature, blood count, blood chemistry and blood pressure should not be altered in early uncomplicated cases.

Untoward findings that point to a fatal termination are a patient who has been acutely ill for two or three days and who is dehydrated as shown by a dry skin and a dry tongue, and who is toxic as shown by an anxious expression and with sunken features. Massive abdominal distention indicates a paralysis of the bowel with its concomitant toxic absorption. Abdominal rigidity reveals that a peritonitis has occurred from the bacterial extravasation from the paralyzed bowel or the strangulated necrotic bowel. In these cases, of course, abdominal auscultation reveals the absence of peristaltic sounds. Persistent fecal vomiting is a sign of obstruction of long duration. One of the most reliable signs that a patient has already absorbed the lethal dose of poison is shown by a cardiovascular collapse with the rapid, weak pulse, low blood pressure, low temperature and a cold, clammy skin. In these cases the laboratory usually reports a high blood count due to the concentration of blood, a low blood chloride, low blood sugar, elevation of the nonprotein nitrogen and an increased combining power of the blood for carbon dioxide.

One of the most outstanding features of acute strangulation experimentally produced is a constant, pronounced fall in blood pressure and a coincident and proportionate increase in pulse rate.<sup>13</sup> A definite relation exists between the length of segment strangulated and the blood pressure and the pulse changes. In the long segments a rapid fall in blood pressure from an average of 150 mm. of mercury systolic to 90 mm. occurs within the first three hours. At the end of five hours it has dropped to 60 mm. and by seven hours has usually reached the 40 mm. level. At the same time, the pulse rate jumps from an average of from 80 to 90 per minute to about 140 at the end of the first hour; 180 or above at the end of two hours; 200 at four; and from then on until death it averages about 240 beats per minute. In short segments the blood pressure falls to approximately 110 mm. systolic in the first six hours and remains at about this level until several hours before death. At this time a very rapid fall begins, often amounting to 60 mm. in an hour's time. The pulse rate usually shows a fairly rapid rise within the first six hours to an average of 140 per minute. After this level has been reached there is generally only a slight elevation during the next ten hours. After sixteen hours, however, a profound toxemia has developed and the pulse shows a rapid increase to over 200, at which level it continues until death.

The evidence that death is not due to a toxemia alone seems conclusive.<sup>14</sup> Since the decrease of chlorides in the blood and tissues is the one find-

ing absolutely constant, and since restoration of blood chloride brings relief, it is believed by some observers to be the most important factor in causing death from experimental distention in acute high intestinal obstruction. Although the term "dechlorination" is generally used, it is possible that the term "demineralization" would be more appropriate. Because of these characteristic blood changes Hayden and Orr<sup>15</sup> believe that certain if not all of the symptoms and signs in obstruction are dependent upon these changes. Recent animal experiments by Cutler and Pijoan<sup>16</sup> have shown that there is a definite increase in the blood potassium following high intestinal obstruction, which may be another contributory factor to the cause of death. Death in all probability is due to changes in the electrolytic condition of the cells so marked that life itself is made impossible. Distention of an intestinal segment may be the initiating cause of the whole train of symptoms. A careful clinical comparison of patients with simple obstruction and acute strangulation shows that the two processes are radically different. The former patient lives from three to eight days without food or water, dying eventually either of (1) inanition and dehydration, or (2) peritonitis following perforation. Collapse symptoms are not present until the last day. The course is a slow, gradually progressive one which terminates fatally in toxemia or collapse. On the other hand, strangulation is an acute affair, characterized by profound collapse and resulting in death, usually in less than thirty-six hours.

As aptly stated by Van Beuren,<sup>17</sup> "the longer a patient with intestinal obstruction lives before operation, the sooner he dies afterward." In attempting to determine the number of hours it takes for a patient with a complete obstruction to absorb the lethal dose of toxins, I reviewed our last sixty-five cases. From the accompanying chart it is shown that the maximum preoperative duration of any cured case was 60 hours; and that the average was 24.5 hours. The maximum preoperative duration of a deceased case in which surgery was performed was 100 hours, with the average being 68.8 hours. One case of torsion of the sigmoid was operated upon within 18 hours of the onset, but expired, probably more from shock than from toxic absorption. It is also interesting to note that the age limit was from 8 days to 81 years. Strangulated hernias and postoperative adhesions accounted for 74 per cent of all the cases in our series. The operative mortality was 27 per cent which compares favorably with other reports in the literature. Van Beuren and Smith<sup>18</sup> in 1925 published a collected report on 1089 operations performed since 1900 with a mortality of 41.8 per cent. In a series of 1000 cases operated upon for intestinal obstruction at various hospitals, reviewed by Gibson<sup>19</sup> in 1900, the mortality was 43.2 per cent. Miller<sup>20</sup> states that the mortality rises approximately 1 per cent for each hour of procrastination. In a series of 343



Table 1. *Acute Intestinal Obstruction*

Number of cases	65				
Sex	Males 38 (57%)		Females 27 (42%)		
Age	Maximum, 81 yrs.		Minimum 8 days		
Site	Intra-abdominal 43 (66%)		Extra-abdominal 22 (34%)		
Operative findings	{	Strangulated hernia 24 (37%)	P. O. adhesions 24 (37%)	Volvulus and torsions 8 (12%)	Intussusception 4 (6%)
		Tumors, cysts, abscesses 2 (3%)	Dynamic ileus 1 (1.5%)	Congenital adhesions 1 (1.5%)	Inflammatory adhesions 1 (1/5%)
Results (Operative cases)	Cured 47 (73%)	Deaths 18 (27%)			
Preoperative duration of cured cases	Minimum 3 hrs.	Maximum 60 hrs.	Average 24.5 hrs.		
Preoperative duration of deceased cases	Minimum 18 hrs.	Maximum 100 hrs.	Average 68.8 hrs.		
Abdominal distention	Positive 27 (74%)	Negative 9 (26%)			
Roentgen ray diagnosis	Positive 24 (82%)	Negative 5 (18%)			

Service of Drs. E. P. Hamilton and P. C. Quistgard, St. Joseph Hospital, Kansas City, Mo.

cases of intestinal obstruction reported by him the mortality rate when the patient was subjected to operation within 12 hours after the onset of symptoms was 29.4 per cent; within 24 hours, 52.9 per cent; within 36 hours, 50 per cent; within 48 hours, 59.6 per cent; within 96 hours, 72.8 per cent and over 96 hours, 84 per cent. The general mortality was 60.9 per cent. The increase in mortality as the case progresses is undoubtedly due to an interference with the blood supply of the intestine superimposed upon the mechanical obstruction. This is dependent upon the increase in the intra-intestinal pressure above the point of obstruction. It has been shown<sup>21</sup> that interference with the blood supply occurs more frequently in the upper part of the intestinal tract than in the lower part because of the more rapid increase in intra-intestinal pressure. Morton<sup>22</sup> found that the duodenum secreted from five to ten times as much fluid as the ileum and that, whereas the normal intra-intestinal pressure varies from 2 cm. to 4 cm. of water, after twenty-four hours of obstruction the pressures within the duodenum and ileum increase from 28 cm. to 36 cm. and from 4.5 cm. to 5 cm., respectively. Herrin and Meek<sup>23</sup> studied the effect of distention on dogs with varying types of fistulas. They state: "Distention is a strong stimulus to intestinal secretion and in obstruction this must work in a vicious circle." Experimentally, it has been proved<sup>24</sup> that a closed intestinal loop could be tolerated by an animal for 21 days provided there was no strangulation of the blood supply or marked distention of the intestine, even though the loop supposedly contained eight hundred times the lethal dose of toxin. From these facts and figures we may assume that any patient coming to surgery with a complete mechanical obstruction within the first 24 hours has a

good prognosis; after 48 hours the prognosis is poor, and after 72 hours of complete obstruction the outlook is practically hopeless.

#### CONCLUSIONS

1. Abdominal auscultation is a definite aid in the diagnosis and prognosis of surgical conditions in the abdomen. It is of especial importance in cases of intestinal obstruction. Intestinal colic is the one constant feature of early mechanical intestinal obstruction.

2. When the diagnosis is doubtful, a roentgen ray picture of the abdomen should be taken and checked every eight hours.

3. Mineral oil may be given a patient to verify the diagnosis of an incomplete obstruction.

4. Abdominal rigidity plays no part in an uncomplicated case of intestinal obstruction.

5. Bowel movements and results of enemas are often misleading factors.

6. Cardiovascular collapse is an indication of a fatal termination.

7. The main factor causing death in acute intestinal obstruction is probably the increased intra-enteric pressure which interferes with the normal intramural blood supply to the intestinal wall, which in turn permits absorption in an otherwise normal intestine.

8. Surgical intervention within the first 24 hours offers an excellent prognosis; after 72 hours it is practically hopeless.

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## THE USE OF INTRAVENOUS DIAL-URETHANE IN OBSTETRICS

AN ANALYSIS OF 1200 CASES

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The application of barbiturate drugs as obstetrical analgesics has increased greatly during the last five years and, by oral or rectal administration, the results have been generally efficacious. In this study dial-urethane (Ciba) was employed intravenously as an analgesic in labor.

Dial (diallyl-malonyl urea) is obtained from veronal through replacement of the ethyl radicals of the latter by an equal number of allyl radicals. The resultant compound is practically insoluble in water but when combined with urethane, a stable solution is formed. Urethane (ethyl carbamate) is frequently used as an analgesic in laboratory animals, but in man it has only a slight hypnotic action. It is excreted from the body as urea. Dial-urethane (Ciba) is marketed in ampules of 2.3 cc. volume, each cubic centimeter containing dial  $1\frac{1}{2}$  gr. and urethane 6 gr.

There were 1200 full term patients in this study; primiparae 915, multiparae 285. The average age was 22 years. The predominance of primiparae is due to this study being carried on in The Willows Maternity Sanitarium, a secluded maternity home for unmarried women. The average sojourn in this institution is ten weeks, during which time one has ample opportunity to study and evaluate the physical, mental and psychic stamina of the patient.

The drug was injected during the first stage of labor at which time the cervix was approximately 2 centimeters dilated accompanied by regular,

strong pains. The total intravenous medication was dial-urethane 4 cc. (dial gr. 6, urethane gr. 24) given over a period of ten minutes. One half hour following this procedure the patient received morphine sulphate gr.  $\frac{1}{8}$  hypodermically. Ether in small amounts was inhaled as the head passed through the vulval ring.

During the injection of dial the blood pressure undergoes a moderately rapid fall. The lowest point in this decline occurs at the end of fifteen minutes after which time the pressure gradually returns to normal. Simultaneously, the pulse and respiration are accelerated, their return to normal closely paralleling that of the blood pressure. These changes can be noted by a study of figure 1.

When the dial is injected rapidly the patient will complain of dizziness and diplopia, hence the rate of 1 cubic centimeter per minute should not be exceeded. Should the solution escape into the subcutaneous tissue or venous sheath pain is immediately noted, induration supervenes and thrombosis may occur in the vein. In this study sloughs and thrombosis were not observed.

The degree of analgesia and amnesia exhibited by the patients following the medication was determined by their reactions to external stimuli, e. g., spoken word, pin prick and their reaction to further uterine pains.

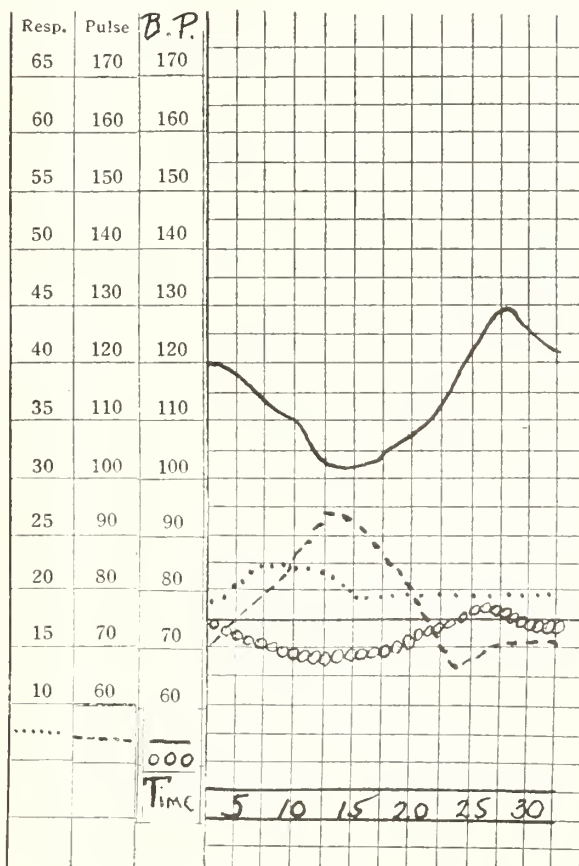


Fig. 1. Response of respiration, pulse and blood pressure to dial.



During an eight hour period all the patients obtained some relief from pain. In the entire group only ten were excited following the injection and this condition did not last for more than one hour. The most usual reaction was the patient became drowsy before the injection was completed and this lethargy gradually deepened until she slept soundly between pains, awakening only with the acme of the uterine contraction. The detailed results of the analgesia may be seen in table 1.

Table 1. Reaction to Intravenous Dial

Reaction	$\frac{1}{4}$ hr.	$\frac{1}{2}$ hr.	4 hr.	8 hr.
Drowsy	1190			
Sleep		1181	1189	
Moderate sleep		5	6	
Light sleep		6	5	67
Excitation	10	8		
Analgesia and amnesia				1133

The presentation and position of the fetus were recorded at the onset of labor by external palpation combined with rectal examination and, when possible, these data were checked by vaginal palpation of the sutures at the time of delivery. These determinations may be noted in table 2.

Table 2. Fetal Presentation and Status of Membranes

Position of Fetus	Primiparae	Multiparae
O. L. T.	764	169
O. D. T.	52	30
O. L. P.	43	41
O. D. P.	36	34
Breech	15	10
Twins	5	1
I.	756	159
Membrane R.	165	120

In order to determine the effect of intravenous dial on the force and frequency of uterine contractions, a series of tracings were made on 100 primiparae and multiparae in active labor. The recording apparatus with slight modifications was similar to that described by Dodek.<sup>1</sup>

A composite tracing of twenty-five primiparae is shown in figure 2. According to this figure, uterine contractions occur on an average of every two minutes, the height of contraction being reached in three minutes.

In figure 3 the effect of intravenous dial can be noted. Here the uterine contractions are more prolonged and the interval between them is lengthened. Following an interval of two hours a continuation of the above effects are to be noted in figure 4.

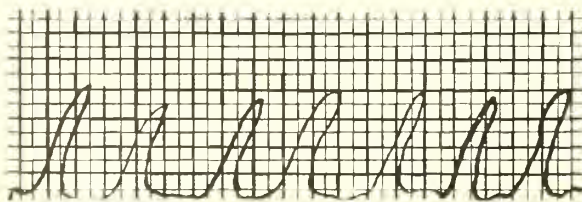


Fig. 2. Regular first stage uterine contractions during labor in primiparae. No medication. Contractions moderately painful. Cervix, 3 cm. dilated. Baby O. L. T. Head (0). Membrane intact. Time unit 1 min.

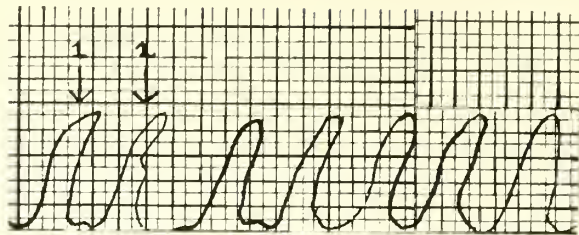


Fig. 3. Demonstrating effect intravenous dial-urethane in primiparae. Dial urethane 4 cc. intravenously at (1). Beginning effect at (2). Continuation of lengthened interval between pains, combined with greater force to contractions. Time unit 1 min.

These observations would tend to explain the decrease in the total time of labor and rapidity of cervical dilatation which have been noted by others.<sup>2,3</sup>

The average duration of labor for multiparae and primiparae is 12½ and 18 hours respectively. In this study the average duration was 16 hours for primiparae and 11 hours for multiparae. A more detailed comparison is shown in table 3.

Table 3. Duration of Labor

DeLee Av.	P. 18 hr.		1st Stage	2nd Stage	3rd Stage
	M. 12¼ hr.				
Primipara			16 hr.	1¾-3	¾ hr. plus
Multipara			17 hr.	¾-½	¾ hr. plus
Williams Av.	P. 18 hr.				
	M. 12¼ hr.				
Primipara			16 hr.	1¾-2	¾ hr.
Multipara			11 hr.	1 hr.	¾ hr.
Dial Av.	P. 16 hr.				
	M. 11 hr.				
Primipara			14¼ hr.	2 hr.	¾ hr.
Multipara			9¾ hr.	1 hr.	¾ hr.

Labor terminated normally in 895 patients while some type of operative aid was instituted in 305. Mediolateral episiotomy was performed 283 times, and although it is considered as a routine procedure by many obstetricians, in this group it is placed under operative measures for comparison. There were no stillborn infants. Resuscitation was necessary on six babies, the operative indications being prolapsed cord and version extraction. Manual removal of the placenta occurred eleven times and a history of infected abortion or endometritis was obtained from eight patients of this group.

Inspection of puerperal cervix was a routine procedure and cervical lacerations were found in twenty-seven patients. These injuries were most frequent in those patients requiring operative aid.

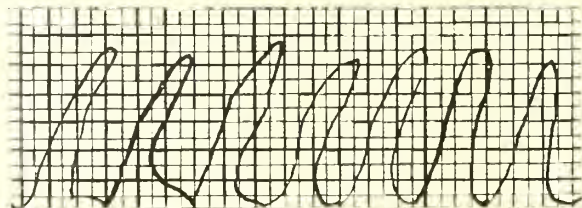


Fig. 4. Two hours after injection of intravenous dial, and hypodermic administration of morphine sulphate, grain 1/6 in primipara. Cervix from 5 to 6 cm. dilated. Baby O. L. P. Head (0). Membrane intact.

Table 4. Termination of Labor

Labor Term	Pri- mip- arae	Mul- tip- arae	Labor Term	Pri- mip- arae	Mul- tip- arae
Normal	720	175	Hemorrhage		
Operative	195	110	postpartum	10	8
Episiotomy	195	88	Babies		
Low forceps	100	76	resuscitated	12	5
Mid forceps	14	6	Cervix lac.		
Ver. extr.	4	5	total	16	11
Prol. cord	5	2	Unilat.	13	11
Manl. aid			Bi-Lat.	3	0
breech	6	1	Vaginal lac.		
Bag induc.	19	9	total	250	102
Placenta			Deep: Extension		
manl. remov.	9	2	of episiotomy	50	8
			Superficial	200	94

A total of 352 perineal lacerations occurred, the greater portion being due to episiotomy or an extension of the incision. Superficial injuries of first degree occurred 144 times.

The absence of narcosis in the babies was attributed to dial-morphine being given early in labor, so that the maximum fetal concentration of the barbiturate occurs within five hours of the time of injection. Again, placental permeability to dial is about midway in the barbiturate group.<sup>4</sup>

#### SUMMARY

1. Dial-urethane 4 cc. was employed intravenously in 1200 full term patients in active labor. Morphine sulphate gr.  $\frac{1}{8}$  was used hypodermically one half hour after the intravenous injection.

2. The above medication was given when the cervix was two centimeters dilated.

3. No accidents of intravenous technic occurred.

4. Excitation was noted in ten patients; however, all experienced amnesia and analgesia of definite degree and duration.

5. In this group a decrease in duration of labor was noted in primiparae and multiparae.

6. As shown by graphic tracings, dial does not decrease the intensity of contraction in the uterine muscle.

7. Normal termination of labor occurred in 895; operative measures were used on 305 patients.

#### CONCLUSIONS

The combination of intravenous dial and morphine subcutaneously is a safe and effective analgesic when given in the first stage of labor. Narcosis of the baby does not occur. When the above described technic is followed, morphine acts as a synergist prolonging the action of dial. The efficiency of uterine contractions as shown by graphic tracings is not decreased.

909 Professional Building.

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## BLOCK OF PUDENDAL NERVE IN OBSTETRICS

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Several years ago I began injecting  $\frac{1}{2}$  per cent novocain into the region of the pudendal nerve as described by Bullag,<sup>1</sup> and wish to report a series of 400 cases. Although this series was originally begun with the idea of obtaining anesthesia of the perineum, I soon discovered that the relaxation of the levator and the external perineal muscles was of much more importance.

A few minutes after injection of novocain, the levators of the lower third of the vagina and the muscles of the perineum relax so markedly that it is unnecessary to iron out the perineum and it is necessary to do fewer and smaller episiotomies. In spite of the initial relaxation of the pelvic floor at the time of delivery, a follow-up of end results showed a better and firmer perineum where an episiotomy had been done even though it were a relatively small one. I therefore returned to my original procedure of doing almost routine episiotomies in primiparae. There were also marked advantages to this procedure of nerve block in cases of occiput posterior where it was necessary to rotate the baby's head with forceps. Previous to the use of this method, this type of case was frequently accompanied by an extension of the episiotomy and also a tear up the side wall of the pelvis. Since the use of pudendal nerve block this has been a rare occurrence. Breech deliveries have been facilitated because of the ability to obtain this marked relaxation. Delivery with this method is no more difficult than a like delivery in a multiparous woman. In my series of Duhrssen's incisions of the cervix, previously reported,<sup>2</sup> I feel that my results might have been more difficult to obtain had it not been for the nerve block.

A consideration of the innervation of the pelvic musculature and integument should be of some value here in understanding the results for which we are aiming as well as the lack of complete skin anesthesia. There is no anesthesia of the upper half of the labia minora or majora.

The pudendal nerve is the chief source of the muscular and cutaneous nerve supply of the perineum and vagina. It is derived from the anterior rami of the second, third and fourth sacral nerves. It leaves the pelvis through the greater sciatic foramen, circles the spine of the ischium and re-enters the pelvis through the lesser foramen. Therefore, by palpating the spine of the ischium with the finger of one hand and using it as a guide, it is possible to inject the solution in the region of the spine and so anesthetize the pudendal nerve as it encircles this structure. The main branch of the nerve is somewhat medial to the posterior border of the tuberosity of the ischium and this is also readily accessible for injection of a solu-



tion. It seems that when the solution is injected in the region of the tuberosity, most of the branches supplying the skin and the musculature of the perineal body are chiefly affected, while injection of the solution in the region of the spine of the ischium affects the lower third of the levator ani muscle on the side injected. There is an interlacing of fibers of the branches of the pudendal with those of the posterior femoral cutaneous. The region of the clitoris is supplied by branches of the ilio-inguinal and dorsal nerves of the clitoris. As complete skin anesthesia is not as a rule present on account of this interlacing innervation of the skin it is necessary to infiltrate if complete anesthesia is desired.

#### TECHNIC OF INJECTION

With the patient in the lithotomy position, the inner margin of the tuberosity of the ischium is located. Usually a point on a line with the anus, but 2 cm. medial to the tuberosity, is the best site of injection. The tip of the needle is inserted and directed outward to the surface of the tuberosity where about 10 cc. of a  $\frac{1}{2}$  per cent novocain solution is injected. The needle is in constant motion to avoid intravenous injection. The needle is then withdrawn about half way and redirected toward the spine of the ischium, which is easily palpated with a finger in the vagina. Here another 10 cc. is injected. Aspiration must be tried before injection to be certain that the needle is not in a blood vessel. The same procedure is then followed on the opposite side. In a period varying from one to five minutes it will be found that the lower third of the levator muscles and the perineal muscles have relaxed so markedly that the fist can be placed in the vagina. The needle found most satisfactory has been a 21 gauge needle about 3 inches long and with a guard at the shank of the needle to obviate loss of the needle in case of breakage.

#### TIME FOR INJECTION

The best time for injection is when the patient is ready for delivery, with the head on the pelvic floor; the duration of the anesthesia is only about one and one half hours.

When patients are not under the influence of one of the various methods of semianarcosis it is possible to deliver and repair the perineum without anesthesia, although anesthesia of the perineum is not complete, as mentioned above. Because of the restlessness induced by hyoscine or the barbiturates, I have found it advisable to give these patients a small amount of gas or gas ether at the time the head is coming through the perineum rather than cope with a moving, restless patient. As soon as the head has been delivered all anesthesia is stopped and the repair is then done without additional anesthesia.

Caudal anesthesia and parasacral anesthesia would probably serve the purpose as well or better than pudendal nerve block but are more difficult

to administer and probably fraught with more danger. Infiltration alone does not give the relaxation of the block and causes boggy tissues, predisposing to tears.

A statistical study of the cases reported here is quite unnecessary except insofar as it will give an idea of the percentage of failure to secure relaxation or anesthesia. An analysis of complicated deliveries of occiput posterior, breech, etc., would reveal only a picture of my personal method of handling these conditions which is not the object of this paper. Rather its aim is to popularize nerve block for both normal and abnormal cases. The success or failure of the method only is under consideration. There were fifteen cases, or approximately 4 per cent, in which there was a complete failure of both relaxation and anesthesia. I do not know to what to attribute these failures except the possibility of an anomaly of distribution of the pudendal nerve. There were thirty-six cases, or 9 per cent, of one-sided failure. These cases of relatively poor results are much rarer recently than in the beginning of this series and I believe that it was purely a question of improper site of injection of the novocain.

The method is quite simple, requires but a few moments, and I believe definitely shortens labor as it relaxes the hard perineum. In acute respiratory infections as pneumonia and so forth where general anesthesia is definitely contraindicated, delivery may be completed with the cooperation of the patient and certainly with less risk than with spinal, sacral or parasacral anesthesia. I know of no contraindication to the method except possibly in skin infections around the site of injection.

#### COMPLICATIONS

In a large series of cases one would certainly expect to find some complications such as infections and hematomata arising from this procedure. However, in the above series there was only one case showing a local infection with a small amount of sloughing, and this I thought might possibly have been caused by the adrenalin in the novocain, which I have since omitted.

Some difficulties have been encountered with unusually obese patients but with a longer needle the nerve may be reached even in these patients.

#### SUMMARY

No obstetrical complications such as postpartum hemorrhage should arise as the anesthetic does not involve the uterine musculature. In fact, postpartum hemorrhage should be less frequent as less general anesthetic is used.

No cases of shock were encountered because care was taken not to inject novocain intravenously.

A series of 400 cases of pudendal nerve block is reported.

Injection of branches of the pudendal nerve at the medial posterior border of the tuberosity of the ischium and the spine of the ischium causes a

marked relaxation of the perineal floor and the lower third of the levator ani muscles.

As the skin of the perineum is to a minor extent supplied by other nerves, complete local anesthesia is not obtained. If this is desired, infiltration is necessary.

The only contraindication is infection about the site of the proposed injection.

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## A FOUR YEAR STUDY OF OBSTETRICS IN THE MISSOURI METHODIST HOSPITAL

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This report covers the work done in four years on the obstetrical service of the Missouri Methodist Hospital, St. Joseph, Mo., from September 1, 1931, to September 1, 1935.

Statistical studies reveal no originality on the part of the writer but are necessary that we may evaluate our methods of treatment. Improvement depends upon the thorough study of the present cases and the analysis of past results, that we may discover our mistakes and avoid them in the future.

It is said that there are over fifteen deaths due to maternal causes every hour in the United States, and one every two hours in Missouri; this calls for study and improvement.

#### GENERAL CONSIDERATIONS

During this four year period, forty-two (different) physicians delivered 1460 mothers of 1480 babies. There were twenty sets of twins, or one to every seventy-three cases; twelve abnormalities and monstrosities, or one to every 124 babies. The rate of live boys to live girls was 106 to 100; this rate remains practically the same throughout the United States year in and year out. The average weight of all babies was 6 pounds, 13 ounces, boys being about 6 ounces heavier than girls. The number of days spent in the hospital had gradually decreased, giving an average of six and three-fourth days per patient. The private patients stayed on an average two days longer than the charity patients; 40.1 per cent of the patients were charity cases. These have increased from 24.2 per cent in 1931 to 48.94 per cent in 1935, an increase of over 100 per cent.

The majority of the patients were not unusual cases. Tables 1, 2 and 3 give the age, parity and presentation and show more primipara and more in the 20's than in any other decade and that 94.8 per cent were cephalic presentations.

Table 1. Age

Under 15 years	4
15 to 19 years	137
20 to 24 years	321
25 to 29 years	259
30 to 34 years	192
35 to 39 years	100
40 to 44 years	50
45 to 49 years	3

Table 2. Gravida

1	508
2	250
3	124
4	82
5	40
6	36
7	20
8	24

Table 3. Presentation

Cephalic	95 per cent	1363
Breech		67
Transverse		4

The position was recorded on such a minority of cases that the figures are of no value, yet the position bears a very important relation to operative delivery.

We cannot change the age of the patient, parity or her economical status; nor can we do much about the sex or presentation of the baby. These things are positive factors when we see the case. However, it is within the power of the medical profession to study all cases thoroughly and apply that type of treatment demanded by good obstetrical judgment.

#### COMPLICATIONS OF PREGNANCY

One out of every twenty-five mothers presented some complication; 58.6 per cent of the complications were due to the toxemias. In other words there was one toxemia to every forty-three cases.

A study of the complications of pregnancy reflects the method of treatment in vogue at a particular time. The complications of pregnancy are listed in table 4.

Table 4. Complications of Pregnancy

Eclampsia	58.6 per cent	17
Tumor previa		1
Preeclampsia		15
Prolapsed cord		4
Placenta previa		15
Diabetic (severe)		1
Pyelitis (severe)		2
Nephritic toxemia		2
Cardiac decompensation		1
1:25 mothers		

#### ECLAMPSIA

All the eclamptic patients had convulsions, hypertension, albuminuria, edema and headache.



The treatment may be divided into conservative and radical. Cesarean section was the method of delivery in the latter group. One mother died shortly after admission before any type of treatment could be given. Table 5 gives the methods of treatment and the results in these cases.

Table 5. Method of Treatment of Eclampsia

Number	Mother	Baby
7	Radical (CS)	
Mortality	2 died 28.4%	all lived 0
9	Conservative	
Mortality	1 died 11.1%	4 stillborn 44.4%
1	Not Treated	
Total 17	died 100% 23.5%	died 100% 29.4%

There was one maternal death and four stillbirths (counting the baby not delivered) in the conservative group. Two mothers, 28.4 per cent of those who had cesarean section, died. All the babies in this group lived. A gross maternal mortality of 23.5 per cent and a fetal mortality of 29.4 per cent in eclampsia are entirely too high.

#### PREECLAMPSIA

The fifteen patients who had albuminuria, hypertension, edema and headache but no convulsions were classified as preeclampsia. All were treated medically before attempting delivery. Bag induction was used in six cases. The majority were delivered by some operative procedure other than cesarean section. There were no maternal deaths but three babies were lost, giving a fetal mortality of 20 per cent.

#### PLACENTA PREVIA

The next most common complication, placenta previa, was treated as shown in table 6.

Table 6. Placenta Previa

Method	No.	Baby
Cesarean section	5	lived
Bag induction		
Spontaneous delivery	2	1 SB
Version and extraction	2	1 SB
Version and extraction	3	3 SB
Vagina packed spontaneous delivery	1	SB
Breech extraction	1	lived
Spontaneous delivery	1	SB
Total	15	7 or 46.6% lost

All the mothers lived. Seven babies, or 46.6 per cent, were lost. It was impossible to compare the various methods of treatment in the types of placenta previa (centralis, lateralis, marginalis) because these were not recorded. However, in this series, cesarean section compared favorably with the more conservative vaginal procedure.

#### INDUCTION OF LABOR

Induction of labor was performed twenty-six times for the following indications (table 7).

Table 7. Induction of Labor

Post mature	6
Preeclampsia	7
Eclampsia	4
Placenta previa	4
Pyelitis	2
Nephritis	1
Undefined toxemia	1
Calcium deficiency	1

Bag induction was used in all except five cases. One mother died of eclampsia, undelivered; a maternal mortality of 3.8 per cent. There were seven stillborn infants and two neonatal deaths, or an infant mortality of 34.5 per cent. Whether these deaths can be attributed to the bag induction or the existing complications of pregnancy is debatable. Certainly bag induction of labor is a major operative procedure.

#### TYPE OF DELIVERY

There has been a definite decrease in the percentage of operative deliveries and the incident of cesarean section.

Table 8. Deliveries

Spontaneous		1037
Operative	28.3%	409
Cesarean section	1:50	29
Breech extraction		59
Version and extraction		24
Craniotomy		4
Forceps	<div> <div>Low</div> <div>Mid</div> <div>High</div> <div>259</div> <div>27</div> <div>7</div> </div>	293

Two out of every seven cases were delivered by some operative procedure; one out of six by low forceps. An operative delivery of 28.3 per cent is rather high and can be reduced, but, an operative delivery when indicated should be done. In selecting the type of delivery, remember that any additional force applied to the baby increases its risk and there is less damage to the baby in cephalic than in breech presentation.

Table 9. Cesarean Section and Operative Delivery

	Operative Delivery	Cesarean Section
1932	35.9 per cent	3.33 per cent
1933	32.2 per cent	2.75 per cent
1934	28.7 per cent	1.16 per cent
1935	26.2 per cent	1.16 per cent

Many operative deliveries were done without indications, procedure or results being written on the charts; only the type of delivery and whether the baby lived or was stillborn were recorded. The length of a labor has a direct relation to operative delivery and stillbirths. There were few spontaneous deliveries in labors of over thirty hours. Every patient should be studied from the standpoint of indications and contraindications before being subjected to operative delivery. Many of the patients were brought into the hospital after attempts at delivery at home and these difficult or "failed forceps" cases present quite a problem. I believe that even in this type of patient an emergency operation carries a greater risk both to the mother and the baby.

## CESAREAN SECTION

From 1924 to 1929 the incidence of cesarean section was one in twenty-seven cases, with a maternal mortality of 16 2/3 per cent. During the last four years there have been twenty-nine cesarean sections, or one in fifty cases, for the indications shown in table 10. There were three stillbirths and one neonatal death, a fetal mortality of 13.8 per cent, and two maternal deaths, or 6.9 per cent maternal mortality. (Iowa 7 per cent, De Lee 7 per cent, Essex County, New Jersey 1.2 per cent.)

Table 10. *Indications for Section*

Eclampsia	7
Placenta previa	5
Justo minor pelvis	4
Contracted pelvis	
Trial of labor	4
Not in labor	3
Attempt to deliver	1
Cardiac decompensation	2
Ruptured uterus	1
Paralysis 18 years	1
Rigid cervix	1

Eclampsia was the most common indication for cesarean section with a mortality of 28.4 per cent. This high death rate emphasizes what Plass says, i. e., "The best obstetric opinion opposes the use of abdominal delivery in this disease." There were no cesarean sections performed on eclampsia patients in the last year of this study. However, abdominal delivery might have saved the babies of the two patients who died undelivered.

We have reduced the incidence and the mortality of cesarean section by observing its indications and contraindications. Those delivered by this operation were better prepared and we realized that cesarean section was not a safe emergency procedure. We can further reduce the incidence and the mortality in cesarean section by the diligent application of these same principles.

## POSTPARTUM COMPLICATIONS

Only one puerperal infection was recorded. No doubt we had more than 0.07 per cent infection but strict morbidity records were not kept. There was one case of puerperal insanity following eclampsia and cesarean section with full recovery. The cases of postpartum hemorrhage were not listed except for 1935. In that year we had seven patients with severe hemorrhages all of whom lived.

## MATERNAL DEATHS

There were six maternal deaths, a rate of 4.2 per 1000 live births in this series. The causes of maternal death were (table 11):

Table 11. *Causes of Maternal Death*

Eclampsia	
Cesarean section	2
Undelivered	2
Embolus (postpartum)	1
Pneumonia (6 months gestation)	1
Total	6

One died suddenly six hours after forcep delivery of air embolism (collapse, rapid pulse and la-

bored respiration). Autopsy was refused. An attempt had been made to deliver her at home before admission to the hospital. The baby lived. Another died of pneumonia at six months gestation. She aborted a few hours before death. Eclampsia was the cause of four deaths; two died undelivered within twenty-four hours after admission and the other two were delivered via cesarean section.

The maternal death rate for the City of St. Joseph, 1934, was 12.2 per 1000 live births; for Missouri 5.85 per 1000. Our death rate, 4.2 per 1000, is not a fair comparison with that of our city nor throughout the state because abortion cases are not included in this study. Including these cases our maternal mortality would be higher. However, abortion patients certainly should be kept apart from maternity patients because of the liability of infection.

There has been little or no improvement in maternal deaths in Missouri during the last ten years.

Chief causes of death in Missouri in 1934 of the age group 10 to 50 are given in table 12. The per cent of females was taken directly from statistical reports of Missouri for 1934.

Table 12. *Causes of Death*

Causes	Both Sexes	Female Per Cent	No. of Females
23- Pulmonary tuberculosis	1274	43.0	577
90- 95 Inc. Heart disease	1208	43.7	528
107-109 Inc. Pneumonia (all forms)	913	42.0	383
45- 53 Inc. Cancer (all forms)	725	52.4	380
Maternal causes	353	100.	353
130-132 Inc. Nephritis (all forms)	579	44.7	259
121 Appendicitis	394	34.3	135

Maternal causes rank fifth. The chief causes of maternal deaths in Missouri in 1934 were (1) infection, (2) abortion, 28.6 per cent, (3) toxemias.

The fact that abortion ranks second in the causes of maternal death is proof that the profession of Missouri is reducing maternal deaths due to other causes, real maternal causes such as toxemia, placenta previa, other hemorrhages of pregnancy. These formerly outranked abortions.

## FETAL MORTALITY

Under this heading are included (A) stillbirth and (B) neonatal deaths.

A. An English author once stated, "One of the greatest risks a human being ever assumes is his passage through the birth canal." There were fifty-nine stillbirths, a rate of 41.5 per 1000 live births in this series. This rate is higher than that of St. Joseph (37.21), and considerably higher than that of the State of Missouri (33.85).

Table 13. *Causes of Stillbirth*

Toxemia	6
Not given	8
Craniotomy	2
Prematurity	6
Montstrosities	3
Prolapsed cord	3
Placenta previa	6
Syphilis (maternal)	4
Version and extraction	9
Cardiac decompensation	1
Ruptured vessel in membrane	1



Version and extraction, an extremely difficult operative delivery, was listed as the cause of nine stillbirths. These cases were normal, uncomplicated pregnancies. The cause of stillbirth in complicated cases having operative delivery was listed under that particular complication and not charged to the type of delivery. The average weight of the stillborn baby was 7 pounds, 2 ounces.

B. Infant mortality for the first year of life has fallen but slightly during the last ten years. There has been still less fall during the first month of life. Thirty-two per cent of the infant deaths during the first year of life occur within the first month. Since the direct causes of these deaths (prematurity, birth injury, asphyxia, congenital debility) are mostly obstetric, improvement must come through better obstetrics. The thirty-five neonatal deaths in this series were due to the following causes (table 14):

Table 14. *Causes of Neonatal Death*

Prematurity	19
Not stated	9
Birth injury	4
Imperforate anus	1
Toxemia (maternal)	2

Stillbirths and neonatal deaths have so many common causes that their prevention may be considered simultaneously. The reduction of our stillbirth rate and infant death rate can be accomplished by better and more intensive prenatal care, thereby reducing toxemias and prematurity and selecting that type of treatment or delivery that is indicated, bearing in mind that intracranial injury is more liable to occur in breech presentation, forcep delivery and premature labor. The excessive use of oxytocic drugs and the (all too common) abuse of analgesia in order to give a shorter labor and a less painful delivery are to be condemned. The new born premature infant must have the attention of a specialist. The complication of pregnancy and the delivery must be managed in such a manner that will give the mother and the baby the best possible chance to live. During this four year period one mother out of every fifteen who entered this hospital lost her baby.

#### SUMMARY

A majority of our patients were in the 20 to 29 age group (optimum), were primiparae and 94.8 per cent had cephalic presentations.

One out of every twenty-five patients presented some complication. The toxemias were the most common, placenta previa next. The best results in toxemias were obtained by conservative treatment. Our mortality in toxemias can be lowered by treating these cases more medically and less by cesarean section. Better results were obtained in placenta previa delivered by cesarean section than by the more conservative vaginal methods.

Induction of labor was performed twenty-six times with a fetal mortality of 34.5 per cent and one maternal death. These deaths may be charged

to the existing complications of pregnancy, but certainly induction of labor is a major obstetrical operation.

The danger of stillbirth and fetal death is ever present under the very best of conditions attending birth. This is increased by operative deliveries. The gradual reduction of operative deliveries (35.9 per cent to 26.2 per cent) from year to year offers some hope of more live babies. The length of labor, presentation and position, indications and contraindications and procedure, should be recorded on each case.

In selecting the type of operative delivery remember that there is less damage to both mother and baby in cephalic than in breech presentations. There was one version and extraction to every sixty cases; this is entirely too many. Immediate (emergency) operative deliveries should not be done on those patients who have been subjected to "attempts to deliver" before entering the hospital.

The incidence of cesarean section has decreased from 1 in 27 cases in 1929 to 1 in 85 cases in 1935. A maternal mortality of 6.9 per cent (1931 to 1935) certainly is an improvement over our former mortality of 16  $\frac{2}{3}$  per cent (1924-1929). This mortality can be further reduced by the diligent application of known facts.

There were no maternal deaths due to infection or hemorrhage associated with pregnancy. Toxemias were responsible for two thirds of our maternal deaths. It would be interesting to know how much prenatal care these patients received. Maternal deaths due to abortion (with or without infection) were not included.

Stillbirths and neonatal deaths reached an appalling total. The indications, contraindications and the type of operative delivery should be carefully considered for each individual case. Better prenatal care, regarding any emergency operative delivery as a grave risk to mother and baby, and special attention for the new born premature are other factors that will assure more than one mother out of every fifteen of a living baby.

#### CONCLUSIONS

This report represents a cross section of the obstetrical work done in approved general hospitals. This hospital is open to any doctor of medicine who is a member in good standing of his local medical society. And he may without consultation perform any type of operative delivery. There are no rules or regulations governing the obstetric case. Some of the difficult operative deliveries were done by men who average about one case on this service every two years. No apologies are offered; this condition exists in a great many general hospitals throughout the United States.

Several things are necessary for better results in obstetrics; namely: (1) The members of the medical profession must use the knowledge they already possess; and after thorough study and consultation of the individual case, apply that type of

treatment demanded by good obstetrical judgment. (2) The expectant mother must take advantage, in time, of the help the medical profession has to offer. (3) "General hospitals must adopt a uniform system of staff organization and control so all obstetrical cases delivered in the hospital are subject to supervision and control of the chief of the obstetrical division, either directly or through his selected representatives." (Skeele.)

The problem of reducing maternal and infant mortality is a universal one.

"The profession alone, with no lay cooperation, can make little headway in its efforts to lower the toll of maternal deaths. The public must be advised and they must be urged to cooperate in this problem. If we can reduce the deaths from abortion, from ill-advised, improperly conducted operative deliveries, from improperly handled toxemic conditions, from wrongly managed hemorrhagic conditions, from ill-considered, nonindicated or emergency cesarean sections, there will remain only a small proportion of the accidents of pregnancy, labor and the puerperium. These will always carry their threat against safe motherhood, for childbirth will never be devoid of danger, but its dangers and death toll will be largely curtailed." (J. S. Taylor.)

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## SURGICAL TREATMENT OF THYROID DISEASE

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The mortality in thyroid surgery varies considerably in the hands of different operators but it should not exceed 2 per cent. This rate presupposes certain favorable conditions: an experienced diagnostic staff, adequate preoperative preparation; safe anesthesia administered by a trained anesthesiologist; reasonable skill in the operator; sound judgment as to necessary limitation of the procedure to stages; and, lastly, it demands constant attention to postoperative management.

*Diagnosis:* For purposes of diagnosis it is necessary that there be some workable classification of thyroid disease. The classification as published by Cattell in the *Surgical Clinics of North America* (December, 1936) seems to us to meet the requirements of such a listing.

*Colloid Goiter:* This is rarely a surgical disease. A diffusely enlarged gland, symmetrical in contour and normal in consistency as determined by palpation, usually occurring in the adolescent near the time of puberty and presenting no associated signs of toxicity, it should never be excised except in rare instances in which it becomes large enough

to warrant subtotal thyroidectomy for cosmetic reasons.

*Adenomatous Goiter:* This is the nodular or endemic type of enlargement of the gland often seen in middle age or in elderly individuals. It is nodular in appearance, nodular in feel and irregular in extent. It usually but not always involves the gland bilaterally.

Adenomatous goiter is a surgical problem from the time of its recognition. It frequently develops subclavicular or intrathoracic extensions which at times are difficult to recognize. The associated tracheal deviation which may result from the latter complication adds to the surgical risk because of the respiratory difficulty which may develop during the course of the operation. The prevention of nodular extensions is therefore one reason for early surgical interference in adenomatous goiter.

A second reason for the early removal of the adenomatous goiter is the imminent possibility that it will become toxic. It is probably safe to say that 50 to 60 per cent of nodular goiters become toxic if allowed to progress over a long period of time. It is certainly true that the highest mortality rate occurs in this group of patients. Because these patients often refuse operation for years they tend to fall into the older age group and the surgeon has age plus toxicity to combat.

A third reason for surgical removal is the danger of malignant degeneration.

Lastly, the nodular goiter should be removed because of its frequent cosmetic unsightliness. The earlier the removal is done the safer it is for the patient and the easier it is for the operator.

Primary hyperthyroidism (exophthalmic goiter, diffuse toxic goiter) is a surgical problem from the moment the diagnosis is made. Roentgen-ray therapy will often bring about remission but only surgical removal of an adequate amount of the diseased thyroid tissue can assure the patient of the greatest possible chance for a permanent cure. Every recurrence of hyperthyroidism means increased risk when the patient finally resorts to surgery. If symptoms have persisted over six months, stage procedures must be considered, even to the extent of pole ligations. When patients are seen by the surgeon in an advanced stage of the disease they are often either in thyroid crisis or on the verge of crisis. The sooner they are operated upon after they are relieved of critical symptoms the safer it is for the patient. We do not agree with those who believe operation should be deferred for a period of three to six weeks following crisis.

*Adenoma:* The presence of any discrete tumor in the thyroid gland, no matter whether it is large or small, whether it occurs in a child or in an aged person, is sufficient reason for its immediate removal. In a series of over 1000 cases of removal of this type of discrete tumor at the Lahey Clinic in Boston, 6 per cent showed evidence of premalignant change and 2 per cent showed definite malignancy with or without regional spread. This, to-



gether with the fact that 95 per cent of all thyroid cancer arises in the discrete adenoma, makes it imperative that these tumors be removed at the earliest possible moment. Carcinomatous degeneration may take place at any age and in adenomas of any size. One of us has seen definite adenocarcinoma in a fetal adenoma 1.2 cms. in diameter, and a malignant adenoma removed from a child of 9. The mortality in these cases is nil unless malignancy is advanced and a wide excision of cervical tissue is necessary. The rare occurrence of discrete adenoma with associated hyperthyroidism is another reason for not postponing operation.

*Thyroiditis:* Thyroiditis may be either acute or chronic. Cases of acute thyroiditis usually subside spontaneously but occasionally go on to suppuration, in which event they should be opened and drained.

Chronic thyroiditis whether of the Hashimoto or Riedel type requires pathological examination of the tissue for definite diagnosis. It may be suspected when a patient complains of slight enlargement of the gland, usually in the isthmus portion, and occasionally with the associated symptom of a sense of constriction of the trachea. The gland is always firmer than normal in consistency, especially in the isthmus. Often it is stony hard in this portion. These patients often present signs of hypothyroidism and occasionally chronic thyroiditis is seen associated with hyperthyroidism. Thyroiditis of tuberculous or luetic origin is not common but may be discovered from time to time during routine examination or it may appear coincidentally with these diseases as they appear elsewhere in the body.

Chronic thyroiditis, excluding that of luetic origin, becomes a surgical problem because of the danger of tracheal constriction due to the contraction of the encircling glandular tissue. This is definitely seen in roentgen-ray studies of the trachea in such cases, the degree of constriction being almost proportional to the length of time the process has been present. In late cases infiltration of the tracheal rings (giving a moth eaten appearance by roentgen ray) with associated narrowing of the lumen is seen. In this respect it is similar to carcinoma. Many cases of chronic thyroiditis go on to myxedema regardless of what is done to relieve them. Surgical procedures should be directed toward protecting the trachea from the formation of constricting bands of tissue.

*Myxedema:* We do not agree with Hertzler that myxedema is a surgical problem. We are interested in it from the surgical standpoint only as it may be caused by chronic obliterating disease of the gland, such as chronic thyroiditis. We feel that it is otherwise entirely a medical problem whether of spontaneous or operative origin.

*Preoperative Preparation:* Every patient with thyroid disease coming into the hospital for surgery should have careful clinical consideration and a basal metabolism test. A definite conclusion

must be drawn as to whether or not there is associated hyperthyroidism. If there is no evidence of toxicity twenty-four hours of preoperative hospitalization is sufficient, provided the general physical condition is reasonably satisfactory. The most important concern is with the cardiovascular system. In general as long as there is no evidence of cardiac decompensation we do not hesitate to operate. Should there be evidence of an inadequate cardiac reserve time should be allowed for restoration of compensation by digitalization.

In certain types of goiter other preoperative procedures are indicated. Should the goiter be very large with intrathoracic extension or subclavicular tendencies the trachea should always be roentgen rayed in both anteroposterior and lateral planes. We have made it a rule to roentgen ray all adenomatous glands in which the lower poles are not definitely palpable. Roentgen rays in these cases are particularly useful to the anesthetist since any unusual deviation or constriction of the trachea indicates the necessity for intratracheal administration of anesthesia if a general anesthetic is chosen. Thus there can be no respiratory interference in the trachea during operation. If the patient has been previously operated on the cords are routinely examined. If there is unilateral paralysis it is always wise to prepare for intratracheal anesthesia. We have made it a rule also to have a donor cross matched and in readiness for transfusion in all cases of adenomatous goiter with intrathoracic extension.

If there is evidence of hyperthyroidism at least a week of preparation is necessary. It must be remembered that patients with adenomatous goiter with secondary hyperthyroidism are the poorer risks. As previously pointed out, the mortality is higher in this group than in any other. Accordingly, such patients require the closest preoperative supervision. A metabolism test is done the morning following admission to the hospital. They are put on sedatives as indicated, complete bed rest, high caloric diet and Lugol solution, gtts. x t. i. d. Digitalization is indicated only when there is evidence of decompensation.

The patient is permitted out of bed once for thirty minutes on the fourth day and twice for such periods on the fifth day. The metabolic rate is checked on the sixth day and decision made as to time of operation. The average hospital preoperative preparation is seven to ten days. Before operation 1000 cc. of 10 per cent glucose in saline solution containing 30 minims of Lugol solution is administered. Preoperative sedation is given as indicated.

Patients entering the hospital in crisis or on the verge of crisis are placed at complete bed rest, given morphine by the clock, and the continuous intravenous administration of 10 per cent glucose containing 30 minims of Lugol solution to the liter. If there is no improvement under these conditions the patient is placed in an oxygen tent and given blood transfusions. Having relieved the patient of

crisis the further preparation follows much the same routine as above except that 10 days should be a minimum time to wait before surgery is attempted.

Should the patient be constantly on the verge of crisis and show no tendency to respond to treatment it is far better to do a unilateral pole ligation than to let the patient die. A few can be saved by this procedure. A few also will respond to deep roentgen-ray therapy though this is probably more dangerous than pole ligation.

The preoperative preparation for patients with primary hyperthyroidism follows much the same routine. Patients who are fibrillating when they enter the hospital do not require digitalization unless they are decompensated. The rhythm will usually return to normal postoperatively. Crisis is treated as previously indicated. Laryngeal examination is carried out in all cases that have had former thyroid surgery. Immediately before operation intravenous glucose in saline containing Lugol solution is given.

*Anesthesia:* The introduction of cyclopropane by Waters in 1934 as a general anesthetic marked the beginning of a decline in the popularity of local infiltration as the anesthetic of choice in thyroid surgery. Surgeons can recall with little satisfaction thyroidectomies performed on an activated, talking, moaning, poor risk patient under local anesthesia.

We are firmly convinced that all toxic patients should be operated upon under general anesthesia. We know, however, that the advantages of a general anesthesia in these cases can be realized only when the anesthetist is one specially trained with considerable experience behind him. Cyclopropane is a dangerous gas in the hands of one inexperienced in its use. The administration is totally different from that of other gases. However, given an anesthetist trained in its use cyclopropane is a safe, reliable gas. Its advantages lie in the rapidity of its induction without the excitement stage, the relatively low concentration of the gas necessary to obtain surgical anesthesia and, of greatest importance, the high percentage of oxygen concentration that may be maintained throughout the operation. The recovery of the patient is made easier because of low incidence of nausea and vomiting. Recovery is rapid and there is therefore less possibility of aspirating mucus into the bronchial tree. The cost of cyclopropane given by the carbon dioxide absorption method is less than forty-five cents per hour.

Cases with tracheal deviation or constriction or both to an extent interfering with respiration should have intratracheal anesthesia, and all large nodular goiters whether intratracheal or not should be thus anesthetized. Breathing is quieter and easier and the danger of tracheal collapse in the midst of operation need not be feared.

The anesthetist should also be acquainted with the administration of helium as a supplementary

gas in cases which, because of laryngeal spasm, partial tracheal collapse or obstruction due to mucus or pressure, become cyanotic or stop breathing during anesthesia.

Nontoxic cases if uncomplicated may be done under local infiltration anesthesia.

*Stage Procedures:* Patients become candidates for stage procedures (1) if they have had symptoms of hyperthyroidism for a period longer than six months; (2) if they have the "apathetic type" of hyperthyroidism; (3) if they have lost over fifteen pounds of body weight during their illness; (4) if they do not respond to preoperative treatment by a satisfactory drop in pulse rate and blood pressure, a reasonable drop in metabolism, show a definite decrease in activation and show a maintenance of or a gain in weight on a high caloric diet; (5) if they are in the age group 5 to 20; (6) if during operation at the end of hemithyroidectomy they have not done well or are not doing well.

It must be admitted that these are generalizations but if each case is considered individually from the above standpoints the surgeon can be certain that he will not err often. It must be remembered that a great deal of assistance can be rendered by the anesthetist in determining whether it is necessary to limit the procedure to one side or to a pole ligation. He will know approximately how much oxygen the patient is using per minute. In general it can be said that it is wiser to limit the procedure to one side if at the end of this time the patient is using up over 500 to 600 cc. of oxygen per minute.

*Technic:* Subtotal thyroidectomy is a major surgical procedure. Attempts at removal of the gland through small incisions are never justified except, perhaps, in cases of discrete adenomata limited to the isthmus of the gland. Thyroidectomy scars should not be cosmetically noticeable after a year unless the patient is unfortunate enough to develop a keloid.

Adequate exposure in thyroidectomy means elevation of the skin flap to a point beyond the thyroid notch. It means reflection of the flap well laterally and deep in the upper angles. It means division of the strap muscles at a high level and their reflection out of the field above and below. It means complete dissection in the lateral fossae so that the internal jugular vein and carotid can be retracted laterally and the thyroid lobe elevated, affording a view of the parathyroids, inferior thyroid artery, and recurrent laryngeal nerve. One reason these structures are not seen during most thyroidectomies is that exposure has been limited by leaving the strap muscles intact. Another reason is that they are not searched for. Too many surgeons depend upon the fact that a patient normally has four parathyroid bodies and upon the fact that the patient can generally get along with one. The inferior thyroid artery carries fully as much, if not more, blood to the gland than does the superior thyroid vessel and it should



always be exposed so that hemorrhage can be controlled instantly, if desired, by ligating it. The recurrent nerve can almost always be identified by careful dissection, its course followed and its fibers avoided during the resection. Ligation of the inferior thyroid artery will make the plunging of hemostats into the substance of the remaining remnant unnecessary thus further protecting the nerve. The superior thyroid vessels should be doubly ligated outside of the gland substance. The trachea should be completely bared and the pyramidal lobe, if any, should always be removed. We have often seen recurrences of hyperthyroidism due to hyperplasia of tissue remaining behind in a large pyramidal lobe. We have also seen recurrences of adenomatous tissue in pyramidal lobes left behind by a previous operator.

In case of intrathoracic extensions the superior pole should be freed first of all, the lateral thyroid veins ligated and, finally, the lower pole brought up out of the chest. Dissection of the recurrent nerve is especially necessary in these cases. The nerve is seldom displaced to any extent by intrathoracic extensions of the gland as has been maintained by several writers. It will nearly always be found in its usual position. Displacement of the nerve is caused more often from rough handling of the gland than from pressure by the intrathoracic mass.

The thyroid remnants should be reconstructed to the side of the trachea so that no raw area is left to adhere to the overlying muscles.

It is not often necessary to institute drainage. However, a cigarette gauze drain should be used to obliterate any unusual cavity left. These drains should be brought out between the prethyroid and sternomastoid muscles, finally emerging at the lateral angles of the wound. The prethyroid muscles are sutured together with mattress sutures. If they have been divided high up near the thyroid notch their nerve supply is left intact and there is never atrophy or poor healing and never any deformity or failure of function.

We prefer Michel clips for skin closure although fine silk is very satisfactory. In either case half of the stitches are removed the second postoperative day and the remainder the third. This precludes the possibility of stitch marks and if the edges have been accurately approximated a hair line scar may be expected.

Serum accumulations occur in 60 per cent of the cases regardless of whether or not drainage has been instituted. The serum is released by probing in the line of the incision without jeopardizing the scar.

The procedure in chronic thyroiditis should have as its aim only protection of the trachea from further constriction. This is accomplished by excision of the thyroid isthmus, baring the trachea completely and suturing the edges of the sternothyroid muscles over the remnants to the side of the trachea. The results are extremely satisfactory.

Adenomas, including their capsule, should be completely removed. Those adenomata located inferiorly and laterally require careful dissection to avoid the recurrent nerve.

Occasionally a case of discrete adenoma with associated hyperthyroidism is seen. The procedure of choice in these cases is subtotal thyroidectomy since one can never be absolutely certain whether the hyperplasia is limited to the adenoma or merely coincident with it.

Carcinoma of the thyroid if extensive may be technically very difficult but it is usually possible to excise completely the strap muscles and large sections of the sternomastoids laterally. The skin is closed as usual. Excision of this large area affords a better chance for penetration of deep therapy rays into the deeper structures of the neck involved in the carcinomatous spread.

*Postoperative Treatment:* We are concerned immediately with postoperative hemorrhage. No matter how carefully hemostasis has been secured hemorrhage sometimes occurs. A nurse should be in constant attendance and notify the attending physician the moment there is any unusual respiratory embarrassment. If the patient becomes cyanotic the incision should be reopened immediately, the clots expressed and exploration made for bleeding points. Cyanosis without respiratory straining is a different problem and requires medical measures, such as the administration of oxygen, heart and respiratory stimulants and aspiration of the intratracheal and bronchial mucus by means of an intratracheal catheter slipped in through the nose or by a tube introduced through the laryngoscope. If the cyanosis is due to atelectasis it may be necessary to use the bronchoscope and remove the offending mucous plug.

All toxic patients are given 750 to 1000 cc. of 10 per cent glucose in saline intravenously immediately postoperatively. Lugol's solution may be added to this in amounts up to 60 to 90 minims to the liter though 30 minims is the usual amount used. Another such intravenous injection is given in the evening following operation. If the patient goes into crisis a Hendon needle is introduced into the saphenous vein at the ankle and a constant drip of 10 per cent glucose solution containing Lugol's is given at the rate of 30 to 40 drops per minute. Blood transfusions may be administered through this constant drip if indicated. The heart is supported and the oxygen tent used freely. Morphine by the clock in amounts sufficient to keep the patient quiet should be administered. Sodium luminal given subcutaneously is often a definite adjunct to morphine, pantopon, or dilaudid in quieting an activated, irrational patient.

Drains are removed as indicated. Those filling deep intrathoracic spaces are removed gradually so that the cavity may obliterate slowly behind it. It is usually possible to have them completely removed by the end of a week or ten days depending upon the depth of the cavity. Clips or stitches are

removed as previously stated, half on the second and the remainder on the third postoperative day. If operation has been performed through a pre-existing surgical scar a day longer is allowed.

Postoperative roentgen-ray treatment in cases of carcinoma should be begun at the earliest possible moment, i. e., 5 to 8 days following operation. The lethal tumor dose for thyroid carcinoma has not yet been determined but encouraging results have been obtained by the delivery of 3000 "r" to the tumor bed through the two lateral portals. Deep therapy should be under the supervision of an experienced radiologist since there is considerable danger of severe radiodermatitis with such dosage.

The purpose of this paper has not been to cover the field of thyroid surgery in all its aspects but rather to bring out a few of the more important considerations which should be borne in mind if the mortality rate is to be kept low, and if the final result is to be satisfactory to the patient both from a functional and a cosmetic viewpoint.

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## APPENDICITIS

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About a year ago the Council of the Missouri State Medical Association accepted a suggestion from Dr. M. Pinson Neal, Columbia, that a study be made of the problem of appendicitis and that information regarding this disease in Missouri should be the concern of this Association. It was determined that the lay population of Missouri should have more information about so common a lesion as appendicitis; it was determined that school children should be informed about the fundamental symptoms, the things they might expect as the result of having an attack of appendicitis. It is therefore in line with this program that we are addressing you on the subject of what you should know about appendicitis.

Before I begin this talk I think you will be interested to know how many people in this audience have had an attack of appendicitis. Will you raise your hands? Now how many have had their appendix removed? No wonder there is interest in the subject of appendicitis when in one audience 10 per cent hold up their hands.

Appendicitis is a disease which not only affects young people but may affect older people. It is a disease that can attack the young baby although it seldom does. I have seen an attack of appendicitis in a baby 6 months old, and I have seen it successfully cured by operation in a woman of 87. Therefore this disease is interesting to everyone.

What is appendicitis? What is the appendix? The appendix is a little organ located in the right

side of the abdomen half way between the umbilicus and the hip bone. What is it for? Nobody knows what its normal function is. About the only thing it ever seems to be able to do is to hurt somebody when it is inflamed. And when you have inflammation of the appendix you have appendicitis.

Appendicitis is a serious condition because it is no respecter of age, of race or of sex. It is important because in the United States 20,000 people died of the disease last year. But a few years ago, there were over six hundred people who died of appendicitis in the State of Missouri. This increase would not be remarkable except for one fact; it is not necessary for 20,000 people, usually young people, to have died in America of the disease—a disease we know how to treat, and we know that when treated properly and in time will result invariably in cure.

Twenty thousand people die of appendicitis, and outside of the clarion call of this committee nobody has raised a distressed voice in protest in the press, or elsewhere, saying how unnecessary is this death rate. From one end of this nation to the other there were about 36,000 killed in automobile accidents. It is just as useless to have all these people die of a disease that science knows how to cure as it is to have the others die in automobile accidents because somebody was drunk or careless. The death rate from appendicitis represents almost 20,000 people who died because somebody did not know what to do when called upon to act early in the disease. There is just one reason for people dying of appendicitis—they do not know what is wrong in the beginning of the attack; they do not know how to interpret symptoms that might mean appendicitis, and they do not know what to do when these symptoms suggest appendicitis.

There is one thing I want to tell the laymen and children in this room that I hope you will never forget: The first symptom of appendicitis is pain. Cancer does not have pain as a primary symptom but appendicitis does. You do not start with an attack of nausea, you start appendicitis with an attack of pain somewhere in the abdomen. It may be a pain high up in the pit of the stomach and you think it cannot possibly be the appendix that hurts. You think it must be caused by something you have eaten. If pain continues an hour, and usually you walk the floor saying you have a pain in your stomach, your mother may say, if you be young, "What have you eaten?" But too often such pain is caused by a little traitor in the right lower side. What happens in the next hour or two if they have appendicitis? Almost invariably an inflamed appendix, after the starting pain, will present the symptom of nausea, or it may be the symptom of vomiting. About this time something else occurs. The pain that started in the pit of the stomach usually moves across the abdomen and finally centralizes in a tender spot in the lower right side, and this is so sore on deep pressure that you think you cannot stand to have it touched.

Anything that starts with pain and these symp-



toms and does not subside in two hours is a serious condition and the person so affected has a problem in his belly that he is not scientifically equipped to interpret. A pain in the abdomen that does not subside within two hours may be the initial pain of an attack of appendicitis and you may be giving up your life unless the disease is well managed. It is important that the public know this danger. Why am I right? Useless deaths from the disease prove this to be true. An abdominal pain of two hours' duration is a matter for interpretation by a competent doctor. Any doctor who will not accept as serious the responsibility of such interpretation is not a doctor in the real sense, for an abdominal pain lasting over two hours deserves the undivided attention of a good doctor. If you call your doctor and he does not come, you go to him, because an hour's delay is so important if you chance to have appendicitis.

Why do we insist upon an early interpretation? Why do we insist that you call a doctor after you have had an abdominal pain for two hours, and if the pain is severe send for him before two hours? What happens? In the child this is what happens. The mother gets up at night and finding the child sick asks what it has eaten, trying to find some excuse for the pain. In the past the grandmother would probably get up and say, "Don't worry, give him some castor oil and a little drink of hot water." That is one of the most dangerous things a grandmother could ever do for a grandchild. We know she did not do it purposely, but she does not know the danger of her advice. No layman has ever been qualified to treat appendicitis properly.

What does it mean to have people informed and knowing how to meet the situation? Picture a college boy in Cape Girardeau in a boarding house. Something has happened in the night and he is awakened with a pain that settles in the right side of his abdomen. He has no idea of what that pain might mean. He is trying to think what he has eaten—but no college boy ever knows that. The average child in this country has not been educated as to what the primary symptoms of appendicitis are. They teach them arithmetic and algebra and history and economics, but nothing about how to keep a boy from killing himself with appendicitis. There can be only one way for a young man to meet this situation, and that is he must know that the pain needs interpretation. There is knowledge and power in information, and that is the reason we are going to the public and telling this little story about appendicitis.

Speaking of consultation, most young mothers have a lot of information as to what to do with their children, but some of it is dangerous information. If the medical profession does not go out and try to teach the truth we will have an increased mortality from appendicitis. A well-meaning mother can be ill advised about her son's "tummy ache." Someone tells her, "Put an ice bag on his abdomen and give him a dose of castor

oil." That type of information, whether from mother, grandmother or doctor, has had much to do with the tremendous mortality from this disease. That is the poorest advice in the world—to give a person with a stomach ache a dose of castor oil. It masks the progress of the condition and hastens perforation and peritonitis.

What is the importance of time lost in the management of a case of true appendicitis? Your doctor finds you have a stomach ache for two hours, he takes your pulse and temperature, makes a blood count, feels your abdomen and advises immediate operation. The idea is this: If I had an appendix pain as I understand it and I could have an immediate interpretation and know it was surely appendicitis, and could have my appendix removed in the next fifteen minutes, my chances for getting well are infinitely better than they would be in the advised two hours. What happens in the usual management of appendicitis? Why do 20,000 people in this country die of appendicitis every year? Eight per cent of the appendicitis cases in this country die. Missouri has one of the highest death rates from appendicitis of any state in the Union. Only three others have as high a rate as we have. It is time we listen to some way of reducing this mortality. If you neglect your case of appendicitis you will not die of appendicitis, you will have a sudden perforation of the intestine and you will later die of peritonitis caused by the perforated appendix. The peritoneum which lines the abdomen is sensitive and if enough of the bowel matter is distributed over the peritoneum by perforation a toxemia will surely ensue, and because a person with appendicitis does not have a chance to build up a defense he will die in spite of everything if his dose of perforation poison be great. We are not then dealing with appendicitis but with a lethal peritonitis. If an individual is operated on early he will not have peritonitis. Whenever a man dies from this disease someone has blundered. If the doctor is not called early enough, then the family is responsible; if he is so called and the patient dies, then the responsibility is the doctor's. Almost 20 per cent of the cases in this country have a rupture at the time of operation. All this has been known for fifty years, but our death rate is very high today. It is pitiful that 20 per cent of the cases of appendicitis may die of peritonitis. Whenever an individual takes a chance on that two hour period and then later comes to operation, his chances for death are increased eight times. But if the doctor is called within the two hour period and the patient is willing to go ahead with the operation within the next few hours, his chances for getting well are 996 out of 1000. That is a good percentage. Twelve hours later his chances are only one in six, and by the third day sad things really begin to happen. There is a ruptured appendix and 875 out of 1000 die. It is a tremendous percentage of deaths just because people are not operated on the first day. Too often they are operated

upon on the fifth day; but every hour after this third day you delay operation the patient would be better off if the doctor had not been sent for.

In over 1065 cases of appendicitis collected and interpreted in ten years, I find we had sixty-five deaths; twenty-three were cases that were operated upon on the fifth day of the disease.

Two outstanding things are these: Appendicitis is tremendously serious; and if you delay operation until the fifth day you are in terrible condition to expect to get well. If you delay until the doctor has to operate on the fifth day, you have a good chance to die. And the cry we want to put across in the State of Missouri is that too many are held over until the fifth day, and your chances of dying of appendicitis are increased.

The patient's chances depend almost entirely on what happens to him before he enters the hospital. If someone gives him a dose of castor oil, or maybe salts, or if he thinks he will wait until morning with a stomach ache that has been getting worse for two hours or more, even by morning I have seen an appendix rupture. I have seen an appendix operated on a half hour after the attack and there was already perforation. Time is so important. If I had appendicitis I would certainly want to get that appendix out as soon as possible. No layman can make a diagnosis, and sometimes it takes the most acute knowledge of the surgeon to make it. If any man here tonight says he never missed a diagnosis of appendicitis, well, he has not seen many cases of appendicitis. But it is the person whose attack has been typical, who did not send for the doctor, or sending for the doctor did not receive aid and waited until it was no longer appendicitis but perforation and in the end peritonitis, that is the person who helps to raise the unnecessary death rate. Our object in this program is to protect the child and the father and mother from useless death from a disease which we know how to cure. We have the facilities, we have the knowledge, yet 20,000 people die every year. It is a painful indictment of the intelligence of the American people. They know everything about automobiles; they know something about politics, but they know nothing about belly ache. Suppose you go into a hospital and have a good doctor operate on you in a reasonable time, here is what happens: Out of the hospital and home in ten days, perhaps in six or eight days; science doing its work as it should be done. But here is a man who delays, two, three or four days; he has to stay in the hospital with a great number of drainage tubes in his side, fighting an attack of peritonitis, the family worried beyond relief, the surgeon not knowing where he is going but hoping against hope that he can bring back something out of the wreck—all on account of a little dose of castor oil or a delay of the patient in making up his mind.

This is the message we want to bring to the people of Missouri: In the presence of abdominal pain

of two hours' duration, call your physician and follow his advice. Have complete rest until he comes. There is no use walking around, crawl into bed; that is where sick people with belly ache belong. Do not take drugs or fluids. If there was a law that would close the mouth of everyone who had an attack of epigastric pain and keep everything out of it, we would not have this death rate from appendicitis. Never use a purgative. By purgative we mean castor oil, but a little pill can do as much harm. Do not apply cold or palliatives. Your doctor may advise it, but don't you do it because it masks the symptoms. Let us look the thing squarely in the face without anything to modify what is going on until the doctor comes. Do not expect a cure from self treatment; the death rate will never be helped by treating yourself. And remember this, that because you have a pain that lasts for two hours does not always mean that you have appendicitis. But the responsibility is yours to get a doctor to interpret any abdominal pain. A lot of these cases are not appendicitis but too many are; so many that 600 people died in Missouri in a year, most of whom should not have died. Nine hundred ninety-six people out of 1000 operated on should be living today. I do not think it is necessary to lose over 1 per cent of appendicitis cases in Missouri. But this can never obtain until the layman does his part in the management of an abdominal pain.

1032 Professional Building.

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#### CARCINOMA OF THE BREAST: VALUE OF PRE- OPERATIVE AND POSTOPERATIVE IRRADIATION

Reviews of records from clinics in different parts of the world and a postoperative study of their 400 cases of carcinoma of the breast belonging to clinical stage 2 treated more than five years ago in which operation took place more than five years ago convince George E. Pfahler and Jacob H. Vastine, Philadelphia (Journal A. M. A., Feb. 19, 1938), that postoperative prophylactic irradiation is of definite value. Such postoperative treatment should begin, when practical, within ten days to two weeks after operation. Almost every physician has seen recurrent carcinoma of the breast disappear under irradiation. Similar treatment given to the cancer cells before the disease has adapted itself to the host and has become macroscopic should accomplish even better results. Preoperative irradiation should be employed within approximately two weeks before operation in cases of carcinoma of the breast in clinical stage 2. Doubtfully operable carcinoma and carcinoma in stage 3 are treated over a much longer time. The preoperative treatment is intended to devitalize the more malignant cells, which usually cause the surgical failures. Skillful preoperative irradiation, then skillful operation, followed by skillful postoperative irradiation should double the total number of persons with cancer of the breast remaining well five years. Statistics compiled from clinics in which both forms of treatment were used showed an improvement of from 11 per cent to 73 per cent when postoperative irradiation is combined with operation as compared with operation alone, according to different authors. Large collections of cases from the literature show a 25 per cent improvement.



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MARCH, 1938

## EDITORIALS

### PYELONEPHRITIS AND SECONDARY HYPERTENSION

Clinical observation as well as laboratory investigation has once again focused attention on the kidney, especially a circulatory disturbance within it, as a cause of hypertension. Bell and Pedersen<sup>1</sup> demonstrated that simple obstruction of the urinary passages with consequent back pressure of retained urine was sufficient to produce transient hypertension in laboratory animals. In another experiment they found that partial occlusion of the renal vein was followed by congestion of the organ; if the kidney were then isolated so as to prevent the development of a collateral circulation the passive congestion so maintained was sufficient to bring about a fairly persistent hypertension. On the other hand, the more recent experiments of Goldblatt serve to illustrate that even interference with the arterial portion of the renal circulation will bring about hypertension. Attempts to explain such phenomena by the supposition that a specific toxin is elaborated as a result of the circulatory disturbance have thus far failed. Histological studies would suggest that the development of hypertension in this manner is a mechanical phenomenon, the response of the heart to the demand for increased pressure to force the blood through sclerosing arteries in the localized renal bed. The fact that removal of both kidneys does not lead to increased blood pressure emphasizes rather than negates this concept although the duration of life after such extensive surgical manipulation is probably too short to permit of much compensatory reaction on the part of the body.

The remarkable case report of Weiss, Parker and Robb<sup>2</sup> and the intriguing hypothesis which they evoked from their observations partially elucidates the relationship existing between kidney stasis and the development of hypertension. Under a mistaken diagnosis one kidney was removed from a patient with malignant nephrosclerosis which they

believe to have some features resembling those of hypertension. Determinations of oxygen content of arterial and venous kidney blood showed that while the sclerotic kidney was utilizing much less than the normal 13 per cent of the oxygen content of the arterial blood, it excreted approximately the same absolute (much less relatively) amount of nitrogen waste products as the normal kidney. In malignant hypertension, reason Weiss and his co-workers, there is a tissue response to an acute infection (which may have disappeared when the patient is first seen but which when initiated is progressive) manifested by stasis in the smaller arterioles, followed by a compensatory increase in blood pressure. This, in turn, induces extravasation of metabolites which are imbibed by, among other tissues, the arterial wall itself. Perhaps these metabolites induce the sclerosis. In the attempt to maintain compensation the blood pressure is raised more and more. More and more kidney arterioles are involved and there is no good ending to the vicious circle so set up. Instead an increasing hypertension ensues.

In occasional instances the removal of a urinary calculus with back pressure upon the kidney has been followed by a gratifying drop in an elevated blood pressure. In these instances it has been possible to interfere in the otherwise progressive vicious circle. Butler<sup>3</sup> has recently reported success in relieving two cases of hypertension associated with persistent pyelonephritis. Nephrostomy in a 7 year old boy failed to relieve the infection and the previously normal blood pressure finally reached the height of 160/105 mm. Hg., all without any evidence of a nephritic process. A nephrectomy was done. Postoperatively and for nearly two years thereafter the blood pressure has been approximately normal. In the second case, a 10 year old girl with a pyuria of at least two years' duration and a blood pressure which reached 190/120 mm. Hg., removal of the infected kidney was followed by the return of the blood pressure to normal. While Butler has had too few cases from which to draw a didactic conclusion he has been led to the hypothesis that "the hypertension might well be related to the local effect of the pyelonephritis rather than to the renal insufficiency encountered late in the disease."

In the etiology of such a complicated entity as hypertension it is still difficult to draw exact conclusions. Nevertheless the accumulating evidence of the last few decades points more clearly than had hitherto seemed likely, to the causative rôle of a persistent renal stasis, whatever its origin. In the present inexact state of knowledge it would seem of the utmost importance to do those things which will mitigate renal stasis, either real or potential. Should Butler's suggestions prove to have merit, as now seems likely, the necessity of vigorous treatment of a pyelonephritis becomes evident.

1. Bell, E. T., and Pedersen, A. H.: The Causes of Hypertension, *Ann. Int. Med.* 4:227, 1930.

2. Weiss, S.; Parker, F., and Robb, G. P.: Histologic Structure of the Kidney, *Ann. Int. Med.* 6:1599, 1933.

3. Butler, A. M.: Chronic Pylonephritis and Arterial Hypertension, *J. Clin. Investigation* 16:889, 1937.

If less radical measures do not suffice and the function of the other kidney is adequate, nephrectomy is suggested as a valuable therapeutic and preventive procedure.

### SPRING MEDICO-MILITARY SYMPOSIUM

The Spring Medico-Military Symposium will be presented by the Kansas City Southwest Clinical Society on March 28 and 29 at Kansas City.

Modern medicine is moving ahead so rapidly that even the investigators themselves have difficulty in keeping abreast of their chosen field. The practitioner who is treating all types of conditions and consulting with his patients on every medical subject has difficulty indeed to know everything that is asked of him. He must be able to sift the wheat from the chaff. He must be able to answer questions raised by news stories and feature stories in the lay press. If he falls behind or fails to know the answer, he may alienate or lose an important part of his clientele. The layman knows the names and usage of the newer methods. The doctor, of course, must know more than his patients or he loses their respect and confidence.

The more rapid the progress the more important becomes the short symposia and conferences which are devoted exclusively to the new and the modern. The program of the Spring Medico-Military Symposium has been designed to give the practicing physician these new subjects in quick, easily grasped forms so that many of the questions which have been raised in the last year will be answered during the two day program.

Obesity is not always a matter of life and death but certain women patients consider it almost so and demand help. The doctors must give them this help in the safest, most scientific manner. Colitis is another subject that is always under discussion and is probably less understood than most common complaints. Sulfanilamide can be a great boon, but it can also deal death quickly. Its proper use is vital and the knowledge of its dangers is necessary if it is to give the results that it should. The whole concept of abdominal surgery is changing. Expectant surgery is taking the place of rash surgery. Insulin is the first specific treatment ever devised for the major functional psychoses. Hematology is a subject that faces every practitioner. The new treatments must be used whenever indicated.

These and many other subjects will be discussed in the morning programs. The afternoons will be devoted to symposia on arthritis and genitourinary diseases. Moving pictures of military subjects will be shown. Chemical warfare, maneuvers of the battle fleet and active treatment of the wounded on the battlefield will be shown with sound.

Guest speakers will include Dr. J. Albert Key, St. Louis, professor of clinical orthopedic surgery, Washington University School of Medicine; Dr. Ovid O. Meyer, Madison, Wisconsin, associate pro-

fessor of medicine, University of Wisconsin; Lieutenant Commander Lincoln Humphreys, United States Navy, and Colonel Kent Nelson, United States Army.

Every part of the program from 9 o'clock Monday morning to 9 o'clock Tuesday evening will be interesting to physician, specialist and surgeon. All physicians are invited to attend the session.

### REDUCE PNEUMONIA MORTALITY

Investigations in pure chemistry have resulted in the preparation of potent, concentrated, highly refined sera useful in neutralizing the toxins of disease, in aborting the progress of infection. Perhaps no more striking example of the therapeutic usefulness of sera can be offered than that arising in the experience derived from the serum treatment of pneumonia. During the last decade the mortality in selected series of cases has been halved and is in a fair way to be halved again. The splendid results achieved by the use of the present day highly refined pneumonia sera need not be confined to hospital centers but may be extended to an entire state, to an entire nation. The states of New York and Massachusetts have amply demonstrated the life-saving power of specific sera administered early. Their example should be widely copied, particularly when it is recalled that this disease is responsible for one in each ten deaths.

The first step in the administration of pneumonia serum is the determination of the type of pneumococcus which has invaded the lung and is responsible for the symptoms. With care sputum may be obtained in the early stages of the disease, for the earlier specific therapy is inaugurated the smaller the effective dose, the more striking the cure. The Neufeld rapid typing technic enables the determination of type within a few minutes, a prompt beginning of effective therapy.

In Missouri there is need for the establishment of typing stations conveniently located at strategic points throughout the state. There is need for the education of physicians to utilize the facilities of these stations. There is need for the education of patients to consult their physicians at the onset of the disease that valuable time may not be lost while this major cause of death spreads throughout the lungs. In some states educational campaigns designed to emphasize the premonitory symptoms of pneumonia, above all to bring out the importance of the oft-neglected common cold, have contributed to a declining death rate. To date Missouri has not been represented in this concentrated attack upon one of the recently controllable diseases.

The State Department of Health is keenly aware of the importance of the problem and may be depended upon to lend its every aid in any campaign against the disease. But it is hampered by lack of funds. The State Legislature must be made to realize the urgency of these needs, must be prevailed upon to provide funds, not only to enlarge the use-



fulness of its statewide system of laboratories. These laboratories must be provided with serum to be distributed to indigent persons whose illness is otherwise unnecessarily prolonged, whose illness otherwise imposes additional hardship in the economic distress which it forces upon the patient and his family. For lobar pneumonia is primarily a disease of the earning period. It affects, especially, the family breadwinner. Its ravages can be considerably mitigated.

The means are at hand. Scientific research has provided the way. Experience in the East has proved the soundness of the method. Experience everywhere has proved the safeness of the method. Experience has proved the economic value of the method. All that remains is to carry the knowledge so accumulated to the bedside of the patient. Because of the expense of serum therapy the state must once again be called upon, enlisted in the crusade against this disease just as it has been enlisted in the war against tuberculosis and syphilis and other ills. Just as it supports sanatoria for the rehabilitation of the tuberculous it must be called upon to support serum centers for the early cure of pneumonia.

The happy state of affairs which these remarks envisage will not be easily accomplished. Persistent effort by members of the Missouri State Medical Association and by other interested agencies must be continually brought to bear upon the problem. The press and the public must first be educated to the possibilities of the new advances in the therapy of pneumonia. And as they are educated they must be urged to prevail upon the legislature to provide the necessary funds with which to accomplish this medically, socially and economically desirable consummation.

### SUBCOSTAL PAIN IN CHILDREN

One of the common complaints of childhood is that of pain under the costal margin and seemingly in the upper abdomen. This pain is much more sharply localized by the child than is the ordinary abdominal pain. It is invariably associated with physical exertion and may necessitate a rest period before activity can be resumed. Otherwise it is not ordinarily incapacitating. It is one of those perplexing symptom complexes which has defied exact analysis. That it is common is shown by the fact that Kugelmass<sup>1</sup> found it in over 11 per cent of some 500 children. In general, treatment has been unavailing.

Apparently this syndrome has received scant attention in the American literature and therefore Kugelmass' contribution is the more welcome. He discarded the variety of theories which have been proposed to explain it. Through acute clinical observation, alone, this investigator was able to discover the cause of the disorder, to propose an ac-

ceptable therapy. Because every child susceptible to this type of pain was relieved by forced exhalation a disturbance in the mechanics of respiration was sought out.

The respiratory excursion follows one of four types: Thoracic, abdominal, thoracic-abdominal and, finally, crossed thoracic abdominal. The first three types are self explanatory, commonly recognized. Crossed thoracic abdominal breathing is characterized first by a marked upward inspiratory movement to the chest. The lungs are unable to fill out promptly enough to counterbalance the increased negative pressure exerted within the thorax by this inspiration. In consequence the diaphragm moves up (not down as in thoracic-abdominal respiration) and actually sucks the abdominal contents into the thoracic cavity. On expiration the thorax sinks and the abdominal wall is thrust forward as its contained organs return to their proper position. In the affected children there was an apparent incoordination of the breathing mechanism. While the crossed thoracic abdominal form was not demonstrated in every child the existence of this disturbance of the muscular mechanism controlling breathing led to the discovery of lesser variations from the normal in the other respiratory types.

As might be expected the vital capacity, that is, the largest possible amount of air which can be exhaled after the greatest possible inhalation, was diminished in this group of children. In approximately half the cases there was some partial obstruction of the upper respiratory tract, chronic sinusitis, allergic rhinitis or adenoids. Correction of such mechanical factors interfering with the easy flow of air was required as the first step in therapy.

After the mechanical factors directly affecting the air passages had been corrected it was necessary to correct those postural defects which in any manner limited the normal respiratory excursion of the lungs. Commonly met was an extreme forward curving upper back and neck with a compensating lordosis. During the correction of these postural defects it was sometimes found that the musculature was inadequate to maintain an ideal relationship between the bony structures, that the effort involved might actually further reduce the already diminished vital capacity, that in consequence attacks of subcostal pain were rendered temporarily more frequent. In conjunction with the posture improving exercises these children were taught to breathe; possibly a tautological concept of an instinctive function but proved by the fact that with reeducation in the manner of breathing these children could be entirely relieved of all subcostal pain. Indeed, after three months of training forty-eight of Kugelmass' fifty-six patients suffered no recurrence of the syndrome.

The most noteworthy feature of the investigations here discussed lies in the fact that they were carried out by a thorough physical examination

1. Kugelmass, I. N.: The Respiratory Basis of Periodic Subcostal Pain in Children, *Am. J. M. Sc.* 194:376, 1937.

without the aid of the laboratory, the basis of most modern research.

## NEWS NOTES

Dr. Edwin H. Schorer, Kansas City, addressed the Kansas City Social Hygiene Society, February 2, on "What Is a Child Worth?"

Dr. E. H. Hashinger, Kansas City, was a guest of the chapter of Sigma Xi at Lawrence, Kansas, on January 20 and spoke on "Sociologic Significance of Modern Utilization of Endocrinologic Knowledge."

The Secretary is prepared to issue duplicate charters to societies whose charters have been lost or destroyed. Charters have recently been issued to Adair-Schuyler-Knox-Sullivan County Medical Society, Morgan County Medical Society and Webster County Medical Society.

Drs. Andrew C. Henske and James L. Mudd, St. Louis, were guests of the Jackson County (Illinois) Medical Society at Carbondale, Illinois, on January 20. Dr. Henske spoke on "Early Symptoms and Diagnosis of Pulmonary Tuberculosis" and Dr. Mudd discussed "Surgical Treatment of Pulmonary Tuberculosis."

Dr. Carl F. Vohs, St. Louis, was elected president of the Northwest Regional Conference held in Chicago February 13. Dr. Vohs served as secretary of the conference at the past session. The next meeting will be held on February 12, 1939. The conference is composed of presidents, secretaries and chairmen of committees on medical economics of fourteen states.

The Philadelphia County Medical Society will hold its third annual postgraduate institute at Philadelphia March 28 to April 1. The subject of the course will be "Diseases of the Digestive Tract." Seventy-three lectures will be presented. The course is open to all physicians who are members of their respective societies. A fee of \$5 will be charged.

The January issue of the *Radiological Review* and *Mississippi Valley Medical Journal* was an all St. Louis number. It contained papers read at the third annual meeting of the Mississippi Valley Medical Society at Quincy, Illinois, September 29, by the following St. Louis physicians: Drs. Ernest Sachs, William H. Vogt, Cyrus E. Burford, Sim F. Beam, V. V. Wood, Willard C. Scrivner, E. V. Mastin, Harold G. Newman and Theodore P. Brookes.

Dr. G. D. Royston, St. Louis, was a guest of the New Orleans Gynecological and Obstetrical Society at New Orleans on January 21 and spoke on "Puerperal Complications."

The Jasper County Medical Society issued the first number of its new publication, *The Caduceus*, on February 7. The purpose of *The Caduceus* is to keep members of the Society informed on the activities of the Society, of programs to be given and projects to be undertaken, and furnish members who have missed meetings information on those programs.

The St. Louis Gynecological Society and the Chicago Gynecological Society held a joint session in Chicago on February 19 with headquarters at the Knickerbocker Hotel. The program of the St. Louis group consisted of papers by Dr. Wm. C. Stude on "Cesarean Section"; Dr. T. K. Brown on "Results of Cultures of the Uterus at Cesarean Section," and Dr. Melvin A. Roblee, "Etiology of Cervicitis."

Attendance at the Tumor Clinic, Fulton, during January was lighter than it has been for some time. There were seven new patients admitted, twenty-four visits and eighteen radium treatments given. Two tumors were radically excised. The roentgen ray machine has been installed and is in operation. Three treatments were given in January and at present five patients are receiving treatment and two more will come in shortly. It is expected the new hospital will be ready for occupancy in a short time.

The American Express Travel Service is cooperating with societies in a "See America" route to and returning from the San Francisco American Medical Association Session. The "See America" movement by deluxe special trains has been endorsed by approximately twenty-five of the state associations. It presents an opportunity for members and their families to join with their colleagues from other states and enjoy the facilities and service of deluxe trains and visit the many scenic attractions in the western states. The tour includes an Indian detour in New Mexico, the Grand Canyon of Arizona, Los Angeles and the beauties of Southern California, Santa Catalina Island, the famous Columbia River Highway in Oregon, Seattle, Victoria in Vancouver, Lake Louise and Banff in the Canadian Rockies, Yellowstone National Park, Colorado Springs and other places. The all-inclusive price is unusually low because of the cooperation of so many medical societies. A folder describing these travel arrangements may be obtained through the Secretary's office or the transportation agents, The American Express Travel Service, 1010 Locust Street, St. Louis.



The medical staff of the Menninger Clinic will conduct its fourth annual postgraduate course on "Neuropsychiatry in General Practice" April 25 to 30, at the Menninger Clinic, Topeka, Kansas. The course will include a brief introduction to the fields of neurology and psychiatry and specific application of this knowledge to the large group of cases of psychoneuroses, psychoses and psychogenic and neurologic disorders which are met in general practice. Suggestions made by those in attendance at the course last year have been incorporated in the program this year. Several guest speakers, prominent in the fields of neurology and psychiatry, will appear at the evening sessions of the course.

The annual campaign for enrollment in the Women's Field Army of the American Society for the Control of Cancer will be conducted during April. This will be on a nation wide scale through a national organization with units in every state and, if possible, in each county of every state. Each county medical society has been requested to act as executive committee and adviser to the county Women's Field Army and to assist in the selection of speakers from the local county societies to address lay audiences regarding the essential facts about cancer, to the end that patients with pre-cancerous lesions or early cancer will present themselves to physicians before their condition becomes hopeless. Mrs. David S. Long, Harrisonville, is state commander. She will appoint ten vice commanders who in turn will appoint county captains who are to organize the counties for the campaign to enlist members. The activities of the army are under the supervision of the Missouri State Committee of the American Society for the Control of Cancer and the state executive committee of the Women's Field Army.

The McAlester Memorial Foundation (Committee on Health and Public Instruction of the Missouri State Medical Association) is sponsoring a series of radio broadcasts over station KFRU, Columbia, each Wednesday at 2:30 p. m. These talks are given in simple language and are designed to assist the listeners in protecting their health. Dr. Frank G. Nifong, Columbia, gave the introductory presentation on February 2. Three talks appear in this issue of *THE JOURNAL*, page 102. Talks which have been given are: February 2, "Introduction," Dr. Frank G. Nifong, Columbia; February 9, "Cancer," Dr. D. A. Robnett, Columbia; February 16, "Cleanliness and Its Relation to Health," Dr. William B. Brown, Columbia; February 23, "Care of the Expectant Mother," Dr. Ralph R. Wilson, Kansas City. Future talks will be on March 2, "Care of Mother and Infant," Dr. Ralph R. Wilson, Kansas City; March 9, "Infant Care," Dr. O. F. Bradford, Columbia; March 16 "Child Welfare," Dr. O. F. Bradford, Columbia; March 23, "The Carriers of

Disease," Dr. M. P. Ravenel, Columbia; March 30, "Meaning of Infection, Contagion and Immunity," Dr. M. Pinson Neal, Columbia; April 6, "Appendicitis," Dr. E. Lee Miller, Kansas City; April 13, "Animal Diseases That May Be Transmitted to Humans," Dr. A. J. Durant, Columbia; April 20, "Mouth Care," and on April 27, "Syphilis."

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

#### Abbott Laboratories

Brucella Melitensis Bacterin—Abbott  
Bismuth Subsalicylate with Butyn-D. R. L., 30 cc. bottle  
Bismuth Subsalicylate with Butyn-D. R. L., 500 cc. bottle  
Dextrose 20% W/V in Distilled Water  
Dextrose, U. S. P., 25% W/V in Physiological Sodium Chloride Solution  
Dextrose 2½% in Physiological Sodium Chloride Solution  
Metaphen Ophthalmic Ointment

#### B. L. Benson

Glycyrrhiza Compound Extract Squares

#### International Vitamin Corporation

I. V. C. Cod Liver Oil Concentrate Capsules  
I. V. C. Cod Liver Oil Concentrate in Oil

#### Lederle Laboratories

Rabies Vaccine-Lederle (Semple Method), 7 vials package

#### Eli Lilly & Co.

Combined Diphtheria Toxoid-Tetanus Toxoid-Alum Precipitated, one 5 cc. vial package

#### Mallinckrodt Chemical Works

Sulfanilamide—Mallinckrodt

#### Mead Johnson & Co.

Mead's Compound Syrup Oleum Percomorphum  
Merck & Co., Inc.

Vinethene (Merck), three 10 cc. bottles package

#### Parke, Davis & Co.

Staphylococcus Toxoid  
Solution Adrenalin Chloride 1:100

#### E. R. Squibb & Sons

Ampule Sterile Solution Procaine Hydrochloride—Squibb, 10 per cent, 2 cc.

#### Winthrop Chemical Co., Inc.

Pontocaine Hydrochloride Tablets, 0.1 Gm.

## MISCELLANY

### AMENDMENTS TO CONSTITUTION AND BY-LAWS TO BE ACTED UPON AT THE 1938 ANNUAL SESSION

#### Amendments to Constitution

Amend Article IV entitled "Composition of the Association" by adding between the words "societies" and "who" of said article the following words "to which

only white physicians shall be eligible" so that when amended said section shall read:

#### ARTICLE IV—COMPOSITION OF THE ASSOCIATION

This Association shall consist of members who shall be members of the component county medical societies to which only white physicians shall be eligible who have been certified to the headquarters of this Association, and whose dues and assessments for the current year have been received by the Secretary.

Amend Article V by striking out "(1)" and the words "and (2) the officers of the Association enumerated in Section 1 of Article IX of this constitution" and adding one new section so that when amended said article shall read:

#### ARTICLE V—HOUSE OF DELEGATES

SECTION 1. The House of Delegates shall be the legislative body of the Association and shall consist of delegates elected by the component county societies. The officers of the Association as enumerated in Section 1, Article IX, of this Constitution shall have the right to attend all meetings of the House of Delegates and all other rights of delegates in such meetings except the right to vote.

Sec. 2. The officers of the House of Delegates shall be a Speaker and a Vice Speaker elected by the delegates from their body. The Secretary of the Missouri State Medical Association shall be the Secretary of the House of Delegates.

Amend Section 1, Article IX—Officers, by inserting after the word "Treasurer" the words "Speaker and Vice Speaker of the House of Delegates" so that when amended said Section shall read:

#### ARTICLE IX—OFFICERS

SECTION 1. The officers of this Association shall be a President, a President-Elect, three Vice Presidents, a Secretary, a Treasurer, a Speaker and a Vice Speaker of the House of Delegates and ten Councilors.

Amend Section 2, Article IX—Officers, by inserting after the word Council at the end of the fifth line the following sentences: "The delegates present from each Councilor District shall meet on the morning of the third day of the Annual Session and elect the Councilor from that District. In the event of death, resignation or removal of any Councilor, the Council may appoint a successor to serve until the vacancy is filled at the next Annual Session. No Councilor shall be eligible to serve more than three consecutive terms. All of the officers shall serve until their successors are elected and installed," so that when amended, Section 2, Article IX, shall read:

Sec. 2. The officers, except the Councilors, shall be elected annually. The terms of the Councilors shall be for two years; one half the members of the Council shall be elected each year. The Secretary and the Treasurer shall be elected by the Council. The delegates present from each Councilor District shall meet on the morning of the third day of the Annual Session and elect the Councilor from that District. In the event of death, resignation or removal of any Councilor, the Council may appoint a successor to serve until the vacancy is filled at the next Annual Session. No Councilor shall be eligible to serve for more than three consecutive terms. All of the officers shall serve until their successors are elected and installed.

#### Amendments to the By-Laws

Amend Section 4, Chapter III, by striking out the word "President" and inserting the word "Speaker" and by inserting after the word "resolutions" the words "on majority vote of the House of Delegates" so that when amended said Section 4 shall read:

SEC. 4. From among members of the House of Delegates the Speaker shall appoint Reference Committees to which reports and resolutions on a majority vote of the House of Delegates shall be referred as follows:

Reference Committee on Amendments to the Constitution and By-Laws.

Reference Committee on Resolutions.

Reference Committee on Miscellaneous Affairs.

Reference Committee on Medical Education and Public Welfare.

He shall also appoint a Committee on Credentials and such other committees as may be considered by him to be necessary.

Amend Section 1, Chapter IV, by striking out the word "President" and inserting the words "Speaker of the House of Delegates" in the first line and the words "each candidate for Councilor must be a resident of the District for which he is nominated" and by striking out the last sentence, "On the adoption of this section the nomination of the President for the succeeding year shall be made from the floor of the House," so that when amended said section shall read:

#### CHAPTER IV—ELECTION OF OFFICERS

SECTION 1. The Speaker of the House of Delegates on the first day of the Annual Session shall select a Committee on Nominations consisting of ten delegates, no two of whom shall be from the same Councilor District. The Committee on Nominations shall report the result of its deliberations to the House of Delegates in the form of a ticket containing the name of one member for each of the offices to be filled at that Annual Session excepting the President-Elect who shall be nominated from the floor of the House of Delegates.

Amend Section 1, Chapter V, by adding after the word "delegates" in the third line the words "until its Speaker is chosen" so that when amended Section 1, Chapter V, shall read:

#### CHAPTER V—DUTIES OF OFFICERS

SECTION 1. The President shall preside at all meetings of the Association and of the House of Delegates until its Speaker is chosen and shall appoint all committees not otherwise provided for; he shall deliver an annual address at such time as may be arranged and shall perform such other duties as custom or parliamentary usage requires. He shall be the real head of the profession of the state during his term of office, and as far as practicable, shall visit, by appointment, the various sections of the state and assist the Councilors in building up the county societies and in making their work more practical and useful.

Amend Section 2, Chapter V, by adding in the first line the words "The President and" and by deleting after the word "Council" in the second line the words "and of the Executive Committee of the Council ex officio" and by substituting for the words "those bodies" in the fourth line the words "the Council" so that when amended this section shall read:

SEC. 2. The President and the President-Elect shall be members of the Council and shall attend all meetings of the Council. Should the office of President-Elect become vacant through death or otherwise the Council may fill the vacancy until the next Annual Session of the Association.

#### THE PHYSICIAN'S INCOME TAX—1938

The following material on the Federal Income Tax Law is reprinted from the *Journal of the American Medical Association*, issue of January 29, 1938, and information on the Missouri law is furnished by the auditor of the State of Missouri.



## Federal Income Tax

This discussion relates only to the requirements of the federal income tax law. Information with respect to the requirements of state income tax laws should be obtained from responsible state sources.

The Revenue Act of 1936 amended in numerous respects the prior income tax law, but none of the changes made relate to physicians as a class distinct from the main body of federal income tax payers.

Everyone who is required to make a federal income tax return must do so on or before March 15, unless an extension of time for filing his return has been granted. For cause shown, the collector of internal revenue for the district in which the taxpayer files his return may grant such an extension, on application filed with him by the taxpayer. This application must state fully the causes for the delay. Failure to make a return may subject the taxpayer to a penalty of 25 per cent of the amount of the tax due.

The normal rate of tax on residents of the United States and on all citizens of the United States regardless of their places of residence is 4 per cent on net income in excess of the exemptions and credits.

### WHO MUST FILE RETURNS

1. If gross income was less than \$5,000 during 1937, a return must be filed (a) by every unmarried person, and by every married person not living with her husband or his wife, whose net income was \$1,000 or more, and (b) by every married person living with her husband or his wife, whose net income was \$2,500 or more. If the aggregate net income of husband and wife, living together, was \$2,500 or more, each may make a return or the two may unite in a joint return.

2. Returns must be filed by every person whose gross income in 1937 was \$5,000 or more, regardless of the amount of his net income and of his marital status. If the aggregate gross income of husband and wife, living together, was \$5,000 or more, they must file either a joint return or separate returns, regardless of the amounts of their joint or individual net incomes.

If the status of a taxpayer, so far as it affects the personal exemption or credit for dependents, changed during the year, the personal exemption and credit must be apportioned, under rules and regulations prescribed by the Commissioner of Internal Revenue with the approval of the Secretary of the Treasury, in accordance with the number of months before and after such change. For the purpose of such apportionment a fractional part of a month should be disregarded unless it amounts to more than half a month, in which case it is to be considered as a month.

As a matter of courtesy only, blanks for returns are sent to taxpayers by the collectors of internal revenue, without request. Failure to receive a blank does not excuse any one from making a return; the taxpayer should obtain the necessary blank from the local collector of internal revenue.

The following discussion covers only matters relating specifically to physicians. Full information concerning questions of general interest may be obtained from the official return blank and from the collectors of internal revenue.

### GROSS AND NET INCOMES: WHAT THEY ARE

**Gross Income.**—A physician's gross income is the total amount of money received by him during the year for professional services, regardless of the time when the services were rendered for which the money was paid, plus such money as he has received as profits from investments and speculation and as compensation and profits from other sources.

**Net Income.**—Certain professional expenses and the expenses of carrying on any enterprise in which the physician may be engaged for gain may be subtracted as "deductions" from the gross income, to determine the net income on which the tax is to be paid. An "exemption" is allowed, the amount depending on the taxpayer's marital status during the tax year as stated before. These matters are fully covered in the instructions on the tax return blanks.

**Earned Income.**—In computing the normal tax, but not the surtax, there may be subtracted from net income from all sources an amount equal to 10 per cent of the earned net income, except that the amount so subtracted shall in no case exceed 10 per cent of the net income from all sources. Earned income means professional fees, salaries and wages received as compensation for personal services, as distinguished from receipts from other sources.

The first \$3,000 of a physician's net income from all sources may be regarded under the law as earned net income, whether it was or was not in fact earned within the meaning set forth in the preceding paragraph. Net income in excess of \$3,000 may not be claimed as earned unless it in fact comes within that category. No physician may claim as earned net income any income in excess of \$14,000.

### DEDUCTIONS FOR PROFESSIONAL SERVICES

A physician is entitled to deduct all current expenses necessary in carrying on his practice. The taxpayer should make no claim for the deduction of expenses unless he is prepared to prove the expenditure by competent evidence. So far as practicable, accurate itemized records should be kept of expenses and substantiating evidence should be carefully pre-

served. The following statement shows what such deductible expenses are and how they are to be computed:

**Office Rent.**—Office rent is deductible. If a physician rents an office for professional purposes alone, the entire rent may be deducted. If he rents a building or apartment for use as a residence as well as for office purposes, he may deduct a part of the rental fairly proportionate to the amount of space used for professional purposes. If the physician occasionally sees a patient in his dwelling house or apartment, he may not, however, deduct any part of the rent of such house or apartment as professional expense; to entitle him to such a deduction he must have an office there, with regular office hours. If a physician owns the building in which his office is located, he cannot charge himself with "rent" and deduct the amount so charged.

**Office Maintenance.**—Expenditures for office maintenance, as for heating, lighting, telephone service and the services of attendants, are deductible.

**Supplies.**—Payments for supplies for professional use are deductible. Supplies may be fairly described as articles consumed in the using; for instance, dressings, clinical thermometers, drugs and chemicals. Professional journals may be classified as supplies, and the subscription price deducted. Amounts currently expended for books, furniture and professional instruments and equipment, "the useful life of which is short," generally less than one year, may be deducted; but if such articles have a more or less permanent value, their purchase price is a capital expenditure and is not deductible.

**Equipment.**—Equipment comprises property of a more or less permanent nature. It may ultimately wear out, deteriorate or become obsolete, but it is not in the ordinary sense of the word "consumed in the using."

The cost of equipment, such as is described above, for professional use, cannot be deducted as expense in the year acquired. Examples of this class of property are automobiles, office furniture, medical, surgical and laboratory equipment of more or less permanent nature, and instruments and appliances constituting a part of the physician's professional outfit, to be used over a considerable period of time, generally over one year. Books of more or less permanent nature are regarded as equipment and the purchase price is therefore not deductible.

Although the cost of such equipment is not deductible in the year acquired, nevertheless it may be recovered through depreciation deductions taken year by year over its useful life, as described below.

No hard and fast rule can be laid down as to what part of the cost of equipment is deductible each year as depreciation. The amount depends to some extent on the nature of the property and on the extent and character of its use. The length of its useful life should be the primary consideration. The most that can be done is to suggest certain average or normal rates of depreciation for each of several classes of articles and to leave to the taxpayer the modification of the suggested rates as the circumstances of his particular case may dictate. As fair, normal or average rates of depreciation, the following have been suggested: automobiles, 25 per cent a year; ordinary medical libraries, x-ray equipment, physical therapy equipment, electrical sterilizers, surgical instruments and diagnostic apparatus, 10 per cent a year; office furniture, 5 per cent a year.

The principle governing the determination of all rates of depreciation is that the total amount claimed by the taxpayer as depreciation during the life of the article, plus the salvage value of the article at the end of its useful life, shall not be greater than its purchase price or, if purchased before March, 1913, either its fair market value as of that date or its original cost, whichever may be greater. The physician must in good faith use his best judgment and claim only such allowance for depreciation as the facts justify. The estimate of useful life, on which the rate of depreciation is based, should be carefully considered in his individual case.

In a Treasury Decision, approved February 28, 1934, No. 4422, it is held, among other things, that

1. The cost to be recovered shall be charged off over the useful life of the property.

2. The reasonableness of any claim for depreciation shall be determined on the conditions known to exist at the end of the period for which the return was made.

3. Where the cost or other basis of the property has been recovered through depreciation or other allowances, no further deduction for depreciation shall be allowed.

4. The burden of proof will rest on the taxpayer to sustain the deduction claimed.

5. The deduction for depreciation in respect to any depreciable property for any taxable year shall be limited to such ratable amount as may reasonably be considered necessary to recover during the remaining life of the property the unrecovered cost or other basis.

Particular attention is called to the last of the foregoing provisions. If, in prior years, rates have been claimed which, if continued, will fully depreciate the cost, less salvage, before the end of its useful life, based on conditions now known, a reestimate of the remaining useful life should now be made and the portion of the cost that had not been depreciated at the beginning of the year 1937 (for a return for the year 1937) should be spread over this reestimated life.

**Medical Dues.**—Dues paid to societies of a strictly professional character are deductible. Dues paid to social organi-

zations, even though their membership is limited to physicians, are personal expenses and not deductible.

**Postgraduate Study.**—The Commissioner of Internal Revenue holds that the expense of postgraduate study is not deductible.

**Traveling Expenses.**—Traveling expenses, including amounts paid for transportation, meals and lodging, necessarily incurred in professional visits to patients and in attending medical meetings for a professional purpose, are deductible.

**Automobiles.**—Payment for an automobile is a payment for permanent equipment and is not deductible. The cost of operation and repair, and loss through depreciation, are deductible. The cost of operation and repair includes the cost of gasoline, oil, tires, insurance, repairs, garage rental (when the garage is not owned by the physician), chauffeurs' wages, and the like.

Deductible loss through depreciation of an automobile is the actual diminution in value resulting from obsolescence and use and from accidental injury against which the physician is not insured. If depreciation is computed on the basis of the average loss during a series of years, the series must extend over the entire estimated life of the car, not merely over the period in which the car is in the possession of the present taxpayer.

If an automobile is used for professional and also for personal purposes—as when used by the physician partly for recreation, or so used by his family—only so much of the expense as arises out of the use for professional purposes may be deducted. A physician doing an exclusive office practice and using his car merely to go to and from his office cannot deduct depreciation or operating expenses; he is regarded as using his car for his personal convenience and not as a means of gaining a livelihood.

What has been said in respect to automobiles applies with equal force to horses and vehicles and the equipment incident to their use.

#### MISCELLANEOUS

**Contributions to Charitable Organizations.**—For detailed information with respect to the deductibility of charitable contributions generally, physicians should consult the official return blank or obtain information from the collectors of internal revenue or from other reliable sources. A physician may not, however, deduct as a charitable contribution the value of services rendered an organization operated for charitable purposes.

**Laboratory Expenses.**—The deductibility of the expenses of establishing and maintaining laboratories is determined by the same principles that determine the deductibility of corresponding professional expenses. Laboratory rental and the expenses of laboratory equipment and supplies and of laboratory assistants are deductible when under corresponding circumstances they would be deductible if they related to a physician's office.

**Losses by Fire or Other Causes.**—Loss of and damage to a physician's equipment by fire, theft or other cause, not compensated by insurance or otherwise recoverable, may be computed as a business expense and is deductible, provided evidence of such loss or damage can be produced. Such loss or damage is deductible, however, only to the extent to which it has not been made good by repair and the cost of repair claimed as a deduction.

**Insurance Premiums.**—Premiums paid for insurance against professional losses are deductible. This includes insurance against damages for alleged malpractice, against liability for injuries by a physician's automobile while in use for professional purposes, and against loss from theft of professional equipment and damage to or loss of professional equipment by fire or otherwise. Under professional equipment is to be included any automobile belonging to the physician and used for strictly professional purposes.

**Expense in Defending Malpractice Suits.**—Expense incurred in the defense of a suit for malpractice is deductible as a business expense.

**Sale of Spectacles.**—Oculists who furnish spectacles, etc., may charge as income money received from such sales and deduct as an expense the cost of the article sold. Entries on the physician's account books should in such cases show charges for services separate and apart from the charges for spectacles, etc.

#### Missouri Income Tax

Returns should be filed by March 15, 1938. Failure to file by that time subjects the taxpayer to a penalty which is his tax being doubled. A verified copy of the Federal return filed should be attached to the Missouri State Income Tax return. Returns should be filed with the City Assessor of St. Louis, or for those who reside outside of St. Louis, the return should be filed with the assessor of the county in which he lives.

All income received with the exception of dividends from national banks and interest on Liberty Bonds should be reported.

The personal exemption for married men is \$2000. Single persons, head of a household, that is, supporting one or more persons under one roof, are entitled to an exemption of \$2000. Single persons with no dependents are entitled to an exemption of \$1000. For each dependent there is an additional exemption of \$200 each.

All expenses on automobiles used for business may be deducted; that is, gasoline, oil, general upkeep and depreciation. Office expense may all be deducted including salaries and

wages, material and supplies, rent, repairs, light, heat, electricity, telephone or whatever is involved in keeping up the office.

Subscriptions to all medical journals and dues to all medical societies are deductible as well as interest paid, taxes, losses by fire, storm or theft not compensated for by insurance. All donations to organized charities can be deducted but this amount is not to exceed 15 per cent of the net income shown on the return.

#### REPORT OF WOMEN'S FIELD ARMY FOR 1936-1937

MRS. DAVID S. LONG, Commander

HARRISONVILLE, MO.

The Women's Field Army of the American Society for the Control of Cancer was organized to "Fight Cancer With Knowledge" in thirty-nine states last year and the first national enlistment campaign for members was held during the week of March 21 to 27, 1937. The campaign represented an unusual cooperative effort of women active in health, education and club activities, and of the medical profession. In each state outstanding leaders have accepted appointments as commanders and are working in close harmony with the medical societies which constitute the executive committees of the Women's Field Army.

In Missouri, Mrs. David S. Long, Harrisonville, is commander of the Women's Field Army and under her leadership the campaign in Missouri was conducted last year. The state was divided into ten districts, each district headed by a vice commander, appointed by Mrs. Long. The districts were then divided into county units, headed by county captains who, with lieutenants appointed in every town and city, were responsible for the actual campaign in the counties. Eighty-five counties in Missouri were organized by the captains and over 1000 lieutenants were appointed to carry on the enlistment drive in cities and towns.

The program of the Women's Field Army is a two-fold one. The major purpose of the Army is to reduce cancer mortality through education. Its educational program seeks to provide for all people the best scientific information and warning concerning cancer through literature, magazines and newspapers, speeches, exhibits and cancer discussions. Physicians throughout the country have given most generously of their time and thought. In Missouri during 1936 and 1937 the speakers' bureau, numbering over one hundred members, donated time and services to the cause of cancer control, giving 150 talks on cancer to more than 17,000 persons. Approximately 50,000 pamphlets on cancer were distributed free by the Missouri State Committee cooperating with the Women's Field Army.

The newspaper publicity given the enlistment campaign was a most valuable part of the educational work. A survey of the publicity received during the campaign shows that more than a thousand stories concerning the drive and the educational campaign appeared in newspapers throughout the state. Radio stations which gave time on their programs for talks on cancer contributed in a large measure to the publicity.

Records concerning the number of patients who, as a result of the educational program, were led to the office of their family physician for a physical examination are not available. It is a matter of such intimate personal concern that no one wishes to publicize it. However, from every section of the state and from many county captains have come stories of men and women who, after attending an educational meeting of the Women's Field Army, became aware of certain symptoms that caused them to consult their family physicians. In several instances these visits disclosed precancerous conditions and even early cancers which can be successfully treated because of their early recognition in the



stage when cancer is curable. Teaching the danger signals of cancer and emphasizing the importance of a complete, annual physical examination by a competent physician is the aim of the Women's Field Army.

The second objective of the Women's Field Army is to carry out an effective program for the purpose of securing \$1 enlistments to finance the educational program of the Army. In order to launch the Women's Field Army last year the expenses of the initial campaign were paid by the National Society. The enlistment campaign for members at \$1 was conducted during the week of March 21-27, 1937, and was then extended through the first week in April. The quota set for the state was \$5000. While the quota was not reached last year, it was the consensus of opinion that the campaign was well worth while because of the tremendous educational value. However, if a permanent and effective Army is to be organized and maintained, funds must be available.

The number of individual enlistments in Missouri received during the enlistment drive were approximately 3200. In the United States over 100,000 women enlisted in the fight against cancer. The total sums collected in Missouri was \$3307.93. Analysis of results of the drive shows that units of the Women's Field Army in large cities were not satisfactorily organized. For instance, the City of St. Louis, with a population of approximately 822,000 persons, contributed \$344.25, and Kansas City, with a population of approximately 400,000, contributed \$22 while Clinton, with only 6000 population, contributed over \$100. This was true not only of larger cities in Missouri but of cities in all parts of the country as well. Plans are being made to correct this flaw in the organization and to bring about better organizations in the larger centers of population this year.

All money collected during the enlistment campaign in March, 1937, was forwarded to the American Society for the Control of Cancer as received, and was allocated to the states as follows: 70 per cent returned to the state for its program, as approved by the American Society for the Control of Cancer; 20 per cent retained by the American Society for the Control of Cancer for expenses in the field, and 10 per cent placed in a national contingent fund.

The refund to Missouri of 70 per cent of gross income realized from the March, 1937, enlistment campaign amounted to \$2315.55. This amount was tentatively budgeted for 1937-38 activities.

The Missouri State Committee of the American Society for the Control of Cancer has made available to the Missouri Women's Field Army the services of the executive secretary, Mrs. H. J. Wunderlich, and the facilities of its permanent office in the Metropolitan Building, St. Louis, since enlistments last year were insufficient to make possible the establishment of permanent Women's Field Army headquarters.

The second enlistment drive will be held during April in 1938, allowing a full month to conduct the actual drive for enlistment. With the benefit of last year's experiences, and with the increased interest in the cancer control problem, the rapidly growing organization of the Women's Field Army should be successful in obtaining this year sufficient funds to support many activities approved by the state executive committee. These might include maintenance of state headquarters with needed personnel and supplies; travel of Women's Field Army officers; purchase of literature, educational aids, exhibit material, etc.; expenses of annual enlistment campaigns, advertising and publicity activities; support of special undertakings in local or state areas such as travel expenses for indigent patients to free treatment facilities; scholarships for medical students interested in the study of cancer, and many other worthwhile endeavors.

## McALESTER MEMORIAL FOUNDATION

INTRODUCTORY ADDRESS ON PROGRAM BROADCAST OVER  
STATION KFRU, COLUMBIA

FRANK G. NIFONG, M.D.

COLUMBIA, MO.

For many years there lived in Columbia, Missouri, a grand old man and physician, a doctor of the "old school" type such as pictured by Ian McLaren in his Dr. Weelum McClure. He was the honored dean of the Department of Medicine of Missouri University and many doctors in Missouri and other states are now following his ideals and leadership in service.

Dr. Andrew Walker McAlester was a pioneer physician and one of the early outstanding surgeons in the West. Particularly was he a great educator and leader in his profession. Withal he was a dreamer and often had visions far ahead of his time. When he was a young doctor, medicine was a noble art but not yet an intricate science as it is now. He had lived and dreamed through the rapid evolutionary progress of the last half century and knew that medical knowledge had become definite scientific knowledge, knew that such knowledge was truth—unchangeable truth—and that it is "truth that makes men free." So he would say, "It is now time that all the people should share the knowledge of health. Even little children can be taught valuable health knowledge by visual education in pictures. Particularly should health knowledge be taught in our grade and junior schools."

This Foundation from which you are to hear simplified health lessons was organized to honor the memory of this great and good man, and to do something in support of his idealism and unselfish service.

These talks are to be carefully selected and there can be no sinister motives ascribed to them as they are authoritative. You have the assurance that they are accredited by the University of Missouri and the Missouri State Medical Association.

If you will examine the coat of arms of the State of Missouri you will discover that the Latin motto thereon, when translated, reads: "The welfare of the people is the supreme law." If you happen to have a little Latin knowledge you will discover that the motto might just as well be translated the "Health of the people" as the welfare. In fact, what could be more important than the health of the people? There can be no faring well when not well. Without good health we cannot be happy and we cannot contribute happiness to our friends and family; we are not any longer producing, efficient members of family and society; we are liabilities. It is of much value to us as individuals to maintain good health, and to society as well.

"A sound mind in a sound body" would be an excellent motto for all of us. And you say, can we do something about it, not being doctors and trained in the science of medicine? Most assuredly, yes.

Medical science is a highly technical and intricate profession and it requires a great accumulation of special knowledge to be a good doctor. We need such doctors to help us out of our desperate situations, but we need them more to teach us the laws of health and to prevent us getting into desperate situations.

Electrical science is most complex and far beyond our everyday knowledge. We have the scientific men who have developed power, telephones, radio, and all for our great benefit. But we, as lay people, that is everyday ordinary individuals, must know something of electricity if we may receive its many benefits. We must know how it is transmitted and something of how this power is applied. We must know enough to keep off a live wire; it may kill us.

So also would it not be mighty wise to have some elementary knowledge of ourselves—our human bodies? To know it is deadly to drink polluted water or eat polluted food, to know something about disease and what is "catching" and why a great mass of this knowledge is now scientific truth, unchangeable facts, for everybody to know and apply for his own benefit.

So it has come about. A time has come when everybody may be educated in health to a great extent. This we might popularly term "Lay Education in Health." The time has come when this knowledge no longer belongs exclusively to the medical profession and I am pleased to tell you that the medical profession is awake to its great responsibility in this matter and is desirous of teaching health and preventive disease measures in every feasible way to lay people, that is, everybody. And, lay people, everybody, are becoming alert more and more about health and the prevention of disease. Many lay organizations and health societies are using efforts for bettering health and preventing disease. Metropolitan papers, magazines, and other publications publish many health articles. Governmental agencies and boards of health in state, city and county are all concerned. One may not be educated properly now unless some elemental health knowledge is obtained. Therefore, the McAlester Memorial Foundation is designed to serve you if you will listen in. You cannot help but be benefited if you will.

We are assuming that we have in our radio audience many young students in our grade schools and in our rural homes. It will be our effort to make these lessons simple and understandable. These twelve lessons can be only a beginning but we hope they may excite a desire in you for more. Health knowledge aside from its great personal worth to you as a healthy and happy individual, cannot help but be to you a matter of great cultural value. You will be more educated than your neighbor if you acquire it.

It is true that many old ideas about disease have been handed down to us through the ages and even now many of our best and oldest families are still somewhat under the influence of folk tales and superstitions. The idea of disease as a visitation from an angry deity is hard to throw off. Science tells us the truth and truth makes us free from superstition.

Typhoid fever is not a scourge sent by God to punish us. It comes from contaminated water, food or milk, and is produced by the specific typhoid bacillus in the water or milk. It is a disgrace for a community to have a typhoid epidemic. So many of the great disease plagues have been conquered by medical science, that any boy or girl who would claim to be really educated must know about them. All civilization from remote times has been intricately linked up with knowledge of health in such times, and disease and superstition has contributed to the decay and fall of those civilizations. What could be a more enticing study for a boy or girl than the history and romance of medicine? And nothing is more exciting than the rapid evolution and development of modern scientific medicine which has made more progress in the last fifty years than all the previous ages.

In the Middle Ages pestilence and plagues depopulated the world. War, horrible as it has become, cannot be more effective in killings.

I can recommend no more romantic or enticing reading than accounts of the modern triumphs of medical science in conquering disease. If you knew something of the microscopic world which has so much to do with plant and animal life your education would be magnified. Begin with the immortal Louis Pasteur and the discovery of fermentation and germ life as it causes disease. Nothing could be more interesting than his invaluable discoveries which are so fundamental to all modern health knowledge. When you know about the

"black plague" scourge of the Orient and Europe, you will be amazed when you find it was spread by fleas and rats.

Read the poet Heine's graphic account of the terror created in Paris when cholera came, and find that we now know what causes cholera and are not afraid. Read the romance of Serah Nemes, the milk maid, and the English county doctor, Edward Jenner, who discovered that her cow pox, inoculated, prevented smallpox, the scourge of Europe. And now, by simple vaccination against this disease, we are insured against it. What more romantic story in fiction could be made than the true story of our army surgeons, Reed, Carroll, Agramonte and Lazear, who went to Panama and discovered the source and the causes of yellow fever, and thus eradicated another plague of the tropics—and all because of such an insignificant little thing as a mosquito.

Read the story of Panama and the canal and the failure of the French nation because the causes of malaria and yellow fever and the means of preventing these diseases not yet had been discovered. Now Panama is a health resort. These are some suggestions concerning health and civilization which all educated folk might know to their cultural benefit.

I may not speak further of these things with our allotment of time. It is our hope that we may excite your interest sufficiently to listen to each of these several important lessons. Each succeeding Wednesday afternoon at 2:30 o'clock you will have this opportunity.

Cancer, a most deadly and horrible disease, is curable when found very early. A little knowledge and the cooperation of lay people will greatly reduce the death rate from this disease and you will hear the most important facts that you should know about it. Dr. Dudley A. Robnett, Columbia, one of the McAlester Foundation trustees, will speak to you about it on February 9 at 2:30 p. m.

On February 16 you will be entertained and enlightened by Dr. Wm. B. Brown, Columbia, Resident Physician in the Division of Health Education of Stephens College. You will learn the true meaning of cleanliness and its relation to disease.

What could be more important than knowledge pertaining to the care and welfare of the expectant mother? Very carefully will this be explained to you by one most capable of telling you and, in addition to that, a second lecture about the care of both mother and infant will be given. These lectures will come to you on February 23 and March 2, respectively. Dr. Ralph R. Wilson, Kansas City, has been selected by the Foundation to present them to you.

Nothing could be more appealing than the subject of child welfare and the diseases and trouble to which children are subjected. This is so directly the responsibility of parents that the Foundation has been particularly concerned about the diseases and the care of children and so have selected Dr. O. F. Bradford, Columbia, because of his peculiar fitness and ability, to give two lectures on this subject on March 9 and 16, respectively.

Dr. M. P. Ravenel, Columbia, the distinguished editor of the *American Public Health Journal*, has kindly consented to speak to you on March 23, on a most enticing and entertaining subject entitled "Carriers of Disease."

If you will listen to Dr. Edwin Lee Miller, distinguished surgeon of Kansas City and one of the Foundation trustees, on March 30, he will tell you in clear, simple language the early warnings of appendicitis which one may have and how you may help your doctor prevent disaster. Twenty thousand people in the United States die every year from appendicitis. We know communities where the lay people, as well as the doctors, are educated about this disease and only one



tenth as many die as is the average all over the country, and this is due to a general knowledge about it. Please listen, for this little knowledge may save your life, or that of a dear friend or relative.

On April 6, Dr. M. Pinson Neal, Columbia, of the Pathology Department in the University of Missouri, will make clear to you what doctors mean by infection and contagion, and will tell you the scientific truth about many of them.

Not the least interesting by any means, is the topic to be given by Dr. A. J. Durant, Columbia, head of the Veterinary Department of Missouri University. On April 13 you will have an opportunity to learn about the diseases of animals which may be communicated to human beings. Surely this could not fail to interest any farm boy or girl.

A distinguished oral surgeon will give a lecture on the care of the mouth, that avenue through which so many diseases may enter. This may be heard on April 20.

The United States Public Health service is making a conscientious and energetic effort to control and ultimately eradicate syphilis, a devastating blood infection and so-called social disease. The Foundation will select a speaker to tell you about it on the afternoon of April 27 at 2:30 o'clock, which will close this series of talks.

## CANCER IS NOT HOPELESS

DUDLEY A. ROBNETT, M.D.

Director State Cancer Clinic at Fulton, and Member of  
Cancer Committee, Missouri State Medical Association

COLUMBIA, MO.

I am happy to speak under the auspices of the McAlester Memorial Foundation. As you have been told, the chief objective of the Foundation is to inform the public in matters vitally affecting the health of the people of our state. The trustees of the Foundation feel that a better understanding of cancer by the laity is most desirable for the protection of the public.

Cancer is one of our most menacing diseases, ranking second as a cause of death in the United States; taking over 160,000 lives last year. Many of those lives could have been saved if the persons afflicted had been informed so that they would have asked for prompt examination and then received early adequate treatment.

I wish the public realized how many cancers are cured each year and how many are prevented by removing or correcting conditions that lead to cancer. Thousands are saved and more are spared the anxiety and suffering by modern surgery and its aids. If we can replace the hopeless feeling that has been built up in the past in regard to cancer by a more cheerful outlook, many more persons will be saved.

I wonder if we realize with the advances in our commercial world during our period such as the telephone, electricity, the automobile, the radio and other inventions, that the science of medicine has gone forward with leaps and bounds. A few decades ago smallpox was rampant with its ravages, typhoid fever in epidemic form was killing more than the bullets of war, yellow fever with a death rate that prevented the completion of the Panama Canal until checked, tuberculosis was unchecked and increasing, infant mortality was of a frightful proportion, diabetes and pernicious anemia were both fatal and there was no relief or respite for the sufferer. A death rate in major surgery was so great as to almost preclude relief from any surgical disease. But thanks to progress due to general and medi-

cal education, we live now safe from smallpox, typhoid fever, malaria, tetanus and diphtheria, and are watching a steady reduction in the tuberculosis death rate and in infant mortality and diabetes benefited by insulin and pernicious anemia helped by liver extract. With these medical advances the field of surgery has advanced so that now the brain, chest and heart are explored and treated with more safety than a simple operation was performed a few decades ago.

These improvements and discoveries including modern surgery, the discovery of radium and its use and the invention and perfection of the roentgen ray place us in a position to treat cancer that was not even dreamed of twenty years ago.

Cancer is one of the oldest diseases known. It was well known to the Egyptians and it is mentioned in the early writing of India. Fossil records have shown that it was present in lizard-like animals which lived over a million years ago.

While we are chiefly interested in the disease in humans it is interesting to know that it is not limited to the human race. It is known in insects, particularly the fruit fly. Domestic animals and animals in the zoo often die of it and it is found in many wild animals in their natural habitats. Fish, fowls and trees also have cancerous growths.

Many facts concerning cancer are known and there are also many fallacies about the disease. Cancer for example is not an incurable disease, is not catching or due to a germ, is not a blood disease, is not peculiar to any sex or race, is not primarily caused or cured by any one cause or agent, is not caused by using aluminum utensils or electrical refrigeration or by eating white bread.

Cancer is a disorderly growth of the cells of the body. The reason for this change in activity of the normal cells to one of rapid growth and change of function, which we call cancer, has not been discovered. This growth, so far as is known, serves no useful purpose in the body and unless the cancer is removed or checked in its growth, it finally becomes fatal, providing death does not occur in some other way first.

Cancer starts usually as a small spot or lump which spreads and later produces other similar growths throughout the body. At first it is quite small and entirely local, but it does not remain so. As it increases in size, it causes trouble either by interfering with the function of important organs near it, by spreading to distant parts of the body, by breaking down and producing bleeding or open sores or by discharging poisonous substances into the system.

Cancer attacks both old and young although it is largely a disease of adult life. There is a low death rate from cancer in young people, a decided rise in the ages 35 to 44, with the peak of deaths from cancer at 60. From 70 on, the number dying from cancer decreases.

Cancer is more frequent among women than men due to its common occurrence in the female breast and reproductive organs. The breast alone is the seat of 33 per cent of all cancer in women.

Notwithstanding much opinion to the contrary, cancer is to a considerable extent a curable disease. The early application of proper treatment is very satisfactory. In all forms of the disease the chance for a favorable result decreases considerably with each week's delay. In the face of such a rapidly advancing condition it is evident that a case which may be curable during the first month becomes hopeless with delay.

The only effective methods of treatment of cancer are surgery, radium and roentgen ray. Cancer cannot be cured by faith healing, salves, internal medicines or diets. Let me emphasize the above, surgery, radium and roentgen ray are the only effective means for the treatment of cancer. Please, in justice to yourself, consult

This is the second of a series of medical broadcasts given under the auspices of the McAlester Memorial Foundation of the Missouri State Medical Association.

your own physician before accepting any cancer treatment.

In breast cancer, for example, the time of treatment is the most important factor in the final outcome. Results have shown that when treatment is instituted in the early stage of the disease, 70 per cent of the patients are still alive and well after five years. Whereas if the disease is far advanced, 50 per cent will not be alive at the end of five years. Thus, proper, prompt treatment makes the difference between success and failure.

Cancer of the uterus is a frequent form of the disease in women and is responsible for 26 per cent of the deaths from cancer in the female. It is one of the forms of cancer which is increasing in frequency. It is more frequent in women who have borne children. The only method of preventing high mortality in this disease is its early recognition and treatment. Any abnormal discharge or any bleeding, varying from the normal period in a woman after 40 years of age calls for immediate examination by a competent physician.

The prevention of cancer depends upon the avoidance or correction of various forms of chronic irritation or inflammation which evidently favor the development of this disease. Correction or replacement of ill fitting false teeth and dental appliances and the removal of infected diseased teeth are examples. The fact that cancer of the skin and mouth are over twice as frequent in men as in women justify the care and attention that the women pay to their skin and teeth.

In its early stages cancer frequently shows "danger signals." A lump in any part of the body, especially one which begins to grow or change should be investigated. Any persistent lump or change in the shape of the breast or abnormal discharge from the breast is a danger signal. Every lump in the breast should be removed. Immediate microscopic examination in the operating room even if the tumor is thought harmless should always be done. Inadequate treatment or allowing any tumor to remain without attention may result in an entirely avoidable disaster. Many of these tumors, 80 per cent, will not be malignant but their removal will prevent later cancer. Any sore which does not heal, particularly on the face or in the mouth or on the lip should be examined and treated. Any unusual discharge or bleeding from any part of the body should be investigated. Bleeding piles, sudden constipation, unexplained diarrhea, persistent indigestion should demand investigation and treatment. Warts, moles, birthmarks and wens that show growth or irritation should be removed at once. Do not wait for pain—there is no pain in early cancer. By the time pain occurs the cancer is usually far advanced. By watching for and respecting these danger signals, many cancers will be prevented and others will be found in early stages.

Many cases of cancer can be cured if they are discovered at the beginning and are properly treated without delay. Delay is always dangerous and may be fatal. Prompt action will often save a life which might otherwise be lost.

I am sure that those of us interested in the control of cancer are not too optimistic. We do not expect the eradication of cancer. We know that the death rate in internal cancers will continue to be high, but we know that much has been accomplished by public education and in view of this we know that the general death rate of cancer can be decreased. The large groups of cancer such as those in the breast, the uterus, the skin and mouth, can be found and treated early. This group represents some 50 per cent of all cancers and while they are not all external they give early signs and are easily accessible for diagnosis. Immediate and complete examination of patients in this group and prompt treatment without the usual delay, will reduce our present death rate from cancer.

Fortunately in these recent years there has been a general improvement in the facilities for the care of the cancer patients, and at the present time the patient with means can get adequate treatment in our state, likewise a very definite plan has been put in motion to take care of poor people afflicted with the disease.

Cancer Clinics have been established at State Hospitals No. 1 in Fulton, Missouri, and No. 4 in St. Joseph where complete facilities are available for the diagnosis and treatment of cancer. These clinics were established by the Eleemosynary Board in conjunction with the Missouri State Medical Association. Any member of the State Medical Association may send charity patients to them for diagnosis and treatment. Further, at the last general assembly, Missouri, under the leadership of the Governor, stepped out in the forefront by authorizing the building of a cancer hospital for the charity patients of the state suffering with this disease. This modern hospital will be located in Columbia and will mark a milestone in the handling of the cancer problem in Missouri.

It is true in the great amount of research work that is being carried on in the field of cancer, discoveries may be made relative to the cause of the disease and to better methods of treating it, but there is no need for us to wait in our program for such discoveries when life saving is possible with our present knowledge and means of treatment.

Where is there such a challenge for the public and the medical men of this country as in a united effort to control cancer? We know that with the present means at our disposal for the treatment of cancer, we can reduce the deaths and the suffering of this disease greatly if the public has a sensible understanding of the early symptoms and signs of the disease, and through this knowledge seeks relief in the stage when cancer can be prevented or cured.

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## CLEANLINESS AND ITS RELATION TO THE PREVENTION OF DISEASE

WM. B. BROWN, M.D.

Resident Physician, Stephens College  
COLUMBIA, MO.

John Wesley said, "Cleanliness is next to Godliness," but surly old Josiah Wedgwood, the potter, answered, "Yes, and next to impossible." Indeed, in those days people regarded personal hygiene and sanitation in general as an extra amount of work and bother, the net result of which was a waste of time. Many regarded a bath as an unpleasant activity which might bring on a cold or some other malady. The assertion, "a bath a year whether one needs it or not," many years ago lacked the spirit of levity which characterizes this expression today.

Years ago poor old Semmelweis, laughed at, scorned and even called crazy by his fellow doctors, finally by constant vigilance against heart breaking opposition, found the cause of childbirth fever. He pleaded with the other physicians to adopt his method of cleaning his hands with water and soap and using lime as a germicide before ministering to the mother in childbirth cases. The "reward" to this early champion of cleanliness was the loss of his position and bitter condemnation by his colleagues.

When the winds of ill will calmed and the bitter critics began to whisper that maybe old Semmelweis was right after all, Vienna became the shining star of the East for cleanliness and scientists trekked there from all corners of the earth.

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This is the third of a series of medical broadcasts given under the auspices of the McAlester Memorial Foundation of the Missouri State Medical Association.



What a simple thing! One of their doctors had learned that by washing and scrubbing his hands after each new patient had been examined fewer patients died, and the old fear and superstition attending childbirth began to disappear. Today in Vienna at the foot of Semmelweis' statue, loving and ever thankful woman-kind come daily to pay tribute to their benefactor. And where they have kissed the cold hardness of the statue, it is said, there has been worn a groove by the touch of a million grateful lips.

Clean hands! How well did this Viennese doctor reveal to all the world that dirt and deadly bacteria go together. Every surgeon now scrubs his hands and for additional protection wears sterilized rubber gloves so that disease germs will not be transmitted to the delicate tissues of the human body. Almost everybody knows that our worst diseases come from dirt. That infected eye of Johnnie's came from rubbing it with his finger. The infected sinus, painful ear or sore throat was a result of going into the slimy water of the old swimming hole. Others know from sad experience that cleaning a rabbit with unprotected hands may result in tularemia or rabbit fever; that a soiled towel may cause trachoma, a blinding eye disease; that those dirty teeth and gums may be the site for trench mouth or some other incapacitating disease; that an unclean glass may give rise to other diseases of the mouth, or even syphilis; that from contaminated water and milk may spring typhoid fever, tuberculosis, septic sore throat or dysentery.

Those unclean finger nails may carry the disease germs of a disabling infection; that pencil you put to your mouth a day or two ago, or even this morning, might have carried the germ for the sore throat which you have today. The "unclean" habit of coughing or sneezing without the protection of a handkerchief is responsible for the spreading of many colds. A handkerchief covered mouth on the part of your friends might, at times, save you a great deal of trouble. That animal pet upon which you shower your affections may, at some time, be responsible for a skin disease. The unwashed vegetables and fruit which you ate might have caused that stomach ache last week.

Does anyone need to know why personal cleanliness is desirable? Let's imagine the skin of the body as a covering or an armor for the protection of each of us. If the skin is broken, man's enemies, dirt and disease germs everywhere present, readily find their way into the body. Now this armor plate in a measure is similar to a roof on a house. When the roof is in good condition, snow, rain, hail and sleet cannot enter; but if the roof is broken, the rain pours through the hole into the interior of the house and oftentimes causes damage. Just so may disease germs enter through the broken or cut skin and do severe damage inside the human body. Indeed these germs may cause such severe infection that death will result. What would we do for the roof? Everybody knows we would patch it to prevent further leaking. We also apply covering to a wound in the skin in order to prevent dirt and disease germs entering. A good bath of soap and water removes the body odors; it stimulates the circulation of the blood; it gives one a feeling of well-being; it greatly improves one's appearance; but most of all it destroys the dirt in which disease germs grow.

Personal cleanliness makes us feel better about ourselves and, moreover, it is an inspiration to others. It improves that feeling of self-confidence which is so important to success. In certain respects cleanliness, therefore, helps in maintaining and promoting mental health, a term we hear frequently these days.

Plain soap and water serves no greater purpose than as a cleansing agent for wounds and cuts on any part of the body. If the wound is open and draining, be not fearful of putting warm soapy water into it in order to

dissolve the dirt and wash away dangerous disease germs. Of course, as I previously mentioned, those same wounds should be covered with sterile dressing to keep the dirt out. Immediate first aid may save you from blood poisoning, the loss of a limb or even your life. If your wound happens to be of a serious nature, however, get in touch with your doctor at once. If you should run a nail into your foot, or receive a puncture wound with some small sharp instrument, do not lose a minute in getting under a doctor's care even though you apply first aid treatment by cleansing the wound before the doctor arrives. He may save you from having lockjaw.

Many people rub blisters on their feet or other parts of their body. Any blisters and the skin around them should be washed with clean soap and water and never opened, unless they open of their own accord. Always remember that broken skin may permit disease germs to enter.

If a dog, squirrel or even your favorite pet bites you, clean the wound with soap and water at once, and it is always safest to call your doctor to administer further treatment.

In addition to the free use of soap and water on our bodies to keep them clean and free from odors, and on wounds to prevent infections, we must not overlook the importance of soap and water in keeping our homes, household articles and floors free from dirt. Cleanliness may be further maintained about the home by use of screens, covering of garbage pails and proper disposal of rubbish, inasmuch as such activities discourage the breeding of flies, mosquitoes and other disease carrying insects.

In order better to appreciate the advances of science and civilization of today let us, for a moment, review the standards of living during the dark ages. No one would ever consider trading places with a person who lived centuries ago. Imagine a few black huts, windowless, doorless, stinking with the odors of smoke from a crude fireplace and the smell of decaying food. Sharing their shelter with human beings, chickens, cows, ducks and dogs run wild over the floor of dark damp earth. The water supply comes from a spring into which surface water easily finds its way. There are no sewers. In one dirty old shack lies a woman with typhus fever. She has been infested with fleas and lice from rats brought in on an incoming ship. Almost every other house has a case of typhoid fever or tuberculosis. People are moaning, coughing, praying in a situation over which they have, it seems, no control. Families purposely are large because so many die off. The cemetery is filled. Last year the terrifying smallpox swept the community and pneumonia in its wake took its toll. Human excreta and the offal from animals may be anywhere. Tainted meats and spoiling foods in so many instances constitute part of the daily meals. Mosquitoes, flies and other insects multiply and spread disease in the dirt of such a community. Crippled old men and lame children hobble about in every house. Many inhabitants are infested with lice. Upon the strong people of this little settlement of the early ages lies an enormous responsibility. They must take care of the weak; they must keep things clean the best they know how. How astounding to consider that 400 years ago the average life span of a human being was 20 years. Nor is it much less surprising to learn that as late as 1856 the average expectancy of life was only 40 years. Today we know that the average person will die at 58 years of age. The Biblical life span of 70 years actually is lived by a small part of our population.

Thus from an olden time, germ infested settlement, of which the inhabitants had a life span of about 20 years, civilization, through the developments and inventions of science and education, has made great advancement. Today the average person may well expect to live 58

years in surroundings that are sanitary and, for the most part, blessed with conveniences and beauty. In a large measure this progress has been consistent and in proportion with the ability of science to maintain cleanliness.

Dirt and filth and germs are one and inseparable, and cleanliness is their common enemy. A seemingly beautiful river may be filled with typhoid fever germs, and hundreds of acres of swampy land may be seething with insect life. Today the fight against disease is against everything large and small which serves as a hiding place for filth and disease carrying insects. Man's activities in this respect may range from the cleansing of a tiny spot on the skin of his hand to prevent infection, to the purification of great bodies of water to eliminate typhoid, and to the drainage of vast areas of swampy land to stamp out malaria.

Sir Ronald Ross, that beloved and unselfish English doctor, who year after year labored in his fight to find the cause of malaria, won against extreme odds. It was he who discovered that the mosquito was the carrier of malaria. Ronald Ross is responsible for the cleaning up of the tropics, for the draining of swamps. His work made possible the building of the Panama Canal, a project which met with dismal failure on the part of the French government because of their inability to cope with the disease laden Isthmus of Panama. Our own unselfish and distinguished Walter Reed and Lazear, prompted by the work of the immortal Ronald Ross, conquered yellow fever and led the way in establishing health resorts throughout the tropics. Pasteur, perhaps better known than any other one great scientist, struck consistently severe blows at dirt, filth and disease throughout a long life of hard work and experimentation for which, before his death, he received world wide acclaim. Joseph Lister's life work may be summed up in a single phrase: He made surgery clean.

All of these and other courageous scientists have contributed greatly toward the advancement of civilization, and by their work have been an inspiration to the world. Today an enlightened people share the security and comforts which science and man's inventive ingenuity have brought us. We can never estimate the value of refrigeration, water purification, pasteurization of milk, sewage disposal, proper ventilation, scientific lighting, government food inspection, pure food laws, first aid teaching, quarantine laws and other important contributions to human welfare. The triumphs and disasters, the indomitable courage, the extreme generosity and the Christian humility of the men of medicine and science are traits of character so endowed with richness that the youth of today might well turn to them for inspiration. The least they can do is to make use of the scientific knowledge which has been so painstakingly acquired for the prevention of disease and the promotion of health. It is a simple matter to follow the rules of cleanliness at all times, and in doing so you may lengthen your own life and contribute to the better health of the community in which you live.

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## OBITUARY

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### E. R. HICKERSON, M.D.

Dr. E. R. Hickerson, Moberly, a graduate of the St. Louis Medical College, 1885, died at his home of coronary disease on January 4, aged 76 years. He retired from practice in 1933.

Dr. Hickerson was born near Rensselaer, the son of the late Dr. John Cook Hickerson who was a pioneer physician in Moberly and an early mayor of Moberly.

Dr. Hickerson attended Central College, Fayette, and

Westminster College, Fulton, before taking his medical work. He completed his education the same year his father died and took over his father's practice. He remained in active practice until 1933 when heart disease forced his retirement.

He was active in civic affairs, having served as member and president of the board of education, member of the library and water boards, was a member of the Elks Club and the Moberly Gun Club. He was widely known as an authority on bird dogs and was in great demand as a field trial judge.

Dr. Hickerson was admired and respected by all who knew him and his death is a loss to the city.

He is survived by his widow, Mrs. Minnie Hannah Hickerson, two daughters, one son, three grandchildren, two brothers and an aunt.

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### FREDERICK M. LOWE, M.D.

Dr. Frederick M. Lowe, Kansas City, 66 years old, died December 20, at his home, 2914 Tracy Avenue, after a brief illness.

Dr. Lowe was born in 1871 in Lathrop, Missouri. He was graduated from the state normal school at Warrensburg in 1891; received a B.S. degree in science, magna cum laude, from Harvard in 1895, and received his medical degree from the Rush Medical College of the University of Chicago in 1904. He went to Kansas City thirty years ago and served on the staff of the General Hospital twenty years. In recent years he was a consulting member. Dr. Lowe taught physiology several years at the Kansas City Medical College.

Failing eyesight caused Dr. Lowe's retirement from active practice in 1927 and for several years he had been blind. His courage in his illness drew the admiration of his friends, among both laymen and physicians. He was made an honor member of the Jackson County Medical Society and of the Missouri State Medical Association.

Dr. Lowe was a member of Phi Rho Sigma medical fraternity; Alpha Omega Alpha, and of Delta Upsilon.

He is survived by his wife, Mrs. Myrtle Osborne Lowe of the home, and a sister, Mrs. J. H. Grove, Brownwood, Texas.—From the Jackson County Medical Society *Weekly Bulletin*.

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### HERMAN D. JEROWITZ, M.D.

Dr. Herman D. Jerowitz, Kansas City, 68 years old, died unexpectedly the afternoon of December 24, in his offices in the Argyle Building.

A native of Koenigsberg, Germany, he came to the United States with his mother when 10 years of age. Going to Kansas City three years later from Chicago, they lived in a small frame house on the site of the present Argyle Building.

Dr. Jerowitz worked his way through school attending Central High School and later graduating from the Kansas City Medical College. When he was a student at old Central High School in 1886, E. C. White was the principal and one of Dr. Jerowitz's teachers. When the physician was an instructor at the old University Medical College at Tenth and Campbell Streets, several years later, Mr. White's son, E. C. White, Jr., was one of his pupils.

Widely known as a family physician, Dr. Jerowitz performed many medical services for the needy without mentioning fees. Many of his patients in his early days as a doctor were residents of the McClure flats, once the home of many Kansas Citians now prominent.

In addition to the time he spent in philanthropic work, Dr. Jerowitz worked to promote the activities of Jewish organizations in the city. He was former president of the order of B'Nai B'rith and a member of the staff of



Menorah Hospital. He was on the staff of Research Hospital.

Dr. Jerowitz is survived by a sister, Mrs. Martha Fishman, with whom he lived many years at 3237 Harrison Street, and a nephew, Toby Fishman, also of the home.—From the Jackson County Medical Society Weekly *Bulletin*.

#### LOUIS LAURENZANA, M.D.

Dr. Louis Laurenzana, Kansas City, died December 11, 1937, of a heart attack while visiting a sister in Rome.

Dr. Laurenzana, 67 years old, had been a practicing physician in Kansas City since 1898. He was born at Anzi, Italy, and came to this country following graduation from medical school at Naples. After several years in New York in postgraduate work he went to Houston, Texas, where he married.

Dr. Laurenzana was county jail physician in 1927. He was associated with several national medical groups and a year ago was given honor membership in the Jackson County Medical Society of which he had been a member since 1903. A leader of the Italian community in civic as well as professional affairs, he participated in welfare movements regardless of their religious or racial nature.

Dr. Laurenzana left Kansas City last September and had visited a sister, Mrs. Josephine Zitto, and a brother, Nicholas Laurenzana, both of Anzi. He was at the home of another sister, Mrs. Anadeo Albano, when he was stricken.

He is survived by his widow, Mrs. Lena Laurenzana, 428 South White Avenue; three sons, Dr. Frank P. Laurenzana, 5732 Holmes Street; Nicholas Laurenzana, 3600 Roanoke Road, and Anthony Laurenzana of the home, and three daughters, Mrs. Marie Pucci, 4924 Bellefontaine Avenue; Mrs. Nerina Grubb, 5712 Wabash Avenue, and Mrs. Echhoff of the home.—From the Jackson County Medical Society Weekly *Bulletin*.

## BOOKS FOR LEISURE MOMENTS

### POPULARIZING PHYSIOLOGY

Since physiology is really the basis of modern medical practice this new text might more readily be considered as a popularization of the fundamentals of medicine. Any contribution of Dr. A. J. Carlson, Professor of Physiology at the University of Chicago, is certain to be factually correct, simply presented and, above all, lucid. In all of these respects "The Machinery of the Body" (University of Chicago Press) written in collaboration with Victor Johnson maintains the usual standard of excellence generally expected of so thorough a scholar.

Written primarily as a text in human physiology for college freshmen the volume will serve admirably the needs of any layman interested in the subject, or of the physician who wishes an armchair review of the complex factors combining to regulate the bodily economy. That which has been proved is skillfully portrayed, the theoretic is barely touched upon. It will provide much easier reading than the usual textbook on physiology.

Not the least interesting part of the volume is in the reproductions from the various sound films which have been made at the University of Chicago to illustrate the phenomena of human metabolism. They create an intense desire to see the entire film and to marvel at the ingenuity which made possible such fascinating presentations of the functioning of the body.

While not unphilosophic in its approach to the prob-

lems of the body it is noteworthy that the volume does not seek to prophesy the eventual solution of all the problems of life and in that it does not finally become morbidly fascinating by an abstract discussion of the whither and where and why, a failing which characterizes some of the similar contributions of other authors.

The medical profession might even render itself a real service by insuring the dissemination of this volume among the laity. From it they might gain an understanding of the foundation of modern scientific medicine, which would encourage them to seek out the physician as healer. The layman, as well as the college freshman, should be given an acquaintance with this thing called modern medicine.

B. Y. G.

### SEMANTICS—MORE OR LESS

Nearly half the words in technical usage among physicians are derived from Greek (not Latin) roots; hence, to attain an easy understanding of the tools by which he makes himself understood to his professional brethren the physician should have a thorough grounding in Greek. Even so, there is basis for the fact that much that will be presented to him or by him will be more or less Greek, to employ a rough vernacular.

But if he would tell his brother physicians of his experiences, thoughts, cases and discoveries, or if he would like to write merely as a philosophic exercise, the physician must have an acquaintance with the meaning of words. He must choose the right word and use it at the right time. Else an elephantine obscurantism is likely to cloud his earnest efforts, test the patience of the editor to whom he submits his sweated lucubrations.

For such a one Dr. James H. Dempster, Editor of the *Journal of the Michigan State Medical Society*, has written a small volume under the title, "Medical Writing, Some Notes on Its Technic" (Bruce Publishing Company, St. Paul). The best advice comes on the very first page of the volume; it applies whether one seeks to write for medical journal or popular magazine. The would-be writer is advised to sit himself down at an imaginary desk, conduct a conversation with the man he thinks the dumbest in the whole kingdom. After he has so arranged his argument that even this stupidest man can understand it, his thesis should be exactly set down on paper, corrected in every conceivable manner, trimmed of unnecessary verbiage—and mailed flat.

Dr. Dempster does not succeed in making the art of prose composition seem nearly so difficult as the art of practicing medicine.

B. Y. G.

### AN OUTBREAK OF EPIDEMIC DIARRHEA IN THE NEW-BORN

Few occurrences have been recorded in the literature of epidemics of diarrhea in new-born infants. During the last three years, however, more than twenty-five such epidemics have occurred in various hospitals in New York City, a fact which led the department of health early in 1936 to call the attention of physicians and lying-in institutions to the condition, urging that all cases be promptly reported to the department of health for investigation. A report of the investigations made by the department of health was presented at the annual session of the American Medical Association in Atlantic City in 1937. Morris Greenberg and Benno M. Wronker, New York (*Journal A. M. A.*, Feb. 19, 1938), have had the opportunity to follow carefully one of the epidemics that occurred in the nursery for new-born infants of a general hospital in New York City and are reporting their results. The epidemic began about Jan. 25, 1937, and was confined to the nursery housing the new-born infants of the ward and semiprivate services, located on the third floor of the hospital building.

## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.

Perry County Medical Society, December 4, 1937.

Ste. Genevieve County Medical Society, December 14, 1937.

Camden County Medical Society, January 7, 1938.

Webster County Medical Society, January 7, 1938.

Montgomery County Medical Society, January 14, 1938.

Dent County Medical Society, January 21, 1938.

#### ASSOCIATE EDITORS: COUNCILORS OF THE TEN COUNCILOR DISTRICTS

##### FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR

##### Harrison County Medical Society

The Harrison County Medical Society met at the office of Drs. W. A. Broyles and E. D. Neville, Bethany, January 20.

Dr. W. R. Moore, St. Joseph, spoke on "Infectious Diseases of the Nervous System, Including Meningitis, Poliomyelitis and Encephalitis."

Dr. Winton T. Stacy, St. Joseph, discussed "Glandular Therapy" and "Obstetrics and Gynecology."

A business session followed the program.

WM. D. HOLCOMB, M.D., Secretary.

##### SECOND COUNCILOR DISTRICT

H. B. GOODRICH, HANNIBAL, COUNCILOR

##### Chariton County Medical Society

The Chariton County Medical Society met at the Florence Hotel in Brunswick on January 26 at 7 p. m., with eleven members present. After dinner the new officers were installed and Dr. U. G. Buck, Rothville, called the meeting to order.

The purpose of the meeting was to discuss and obtain a better understanding of the principles embodied in the Basic Science Law and to discuss state medicine.

After due deliberation a motion carried unanimously that the Chariton County Medical Society favor the

passage of a Basic Science Law and that this information be sent to the State Senator and County Representative and the State Medical Association; also that the Delegates be instructed to present this at the next Annual Session.

A similar motion carried unanimously that the Chariton County Medical Society go on record as being opposed to state medicine.

G. W. HAWKINS, M.D., Secretary.

##### Randolph-Monroe County Medical Society

The Randolph-Monroe County Medical Society met in the Public Library, Moberly, February 8 at 8:30 p. m. The meeting was called to order by the president, Dr. George M. Ragsdale, Paris.

Dr. Harry C. Griffiths, Moberly, was elected to membership.

A communication was read from the Missouri Tuberculosis Association and a proposal for nursing service by the association was approved.

Dr. Guerdon F. Hardy, St. Louis, spoke on "Otitis Media." This was well given and enjoyed by the members. A general discussion of the subject followed the talk.

Following the meeting a lunch was served at Miller's Cafe.

Those present were Drs. Guerdon F. Hardy, St. Louis; Harry Tatum, Brunswick; G. W. Hawkins and F. L. Harms, Salisbury; J. F. Flynt, M. C. McMurry and G. M. Ragsdale, Paris; R. D. Streeter, F. L. McCormick, L. L. Grzesk, C. C. Smith, C. K. Dutton, O. K. Megee, T. S. Fleming, M. P. Hunter and M. E. Kaiser, Moberly.

M. E. KAISER, M.D., Secretary.

##### FOURTH COUNCILOR DISTRICT

R. B. DENNY, CREVE COEUR, COUNCILOR

##### St. Charles County Medical Society

The St. Charles County Medical Society met January 21 at St. Charles.

The following officers were elected: President, Dr. A. P. Erich Schulz, St. Charles; vice president, Dr. George E. Kister, St. Charles; secretary and treasurer, Dr. L. E. Belding, St. Charles; delegate, Dr. A. P. Erich Schulz, St. Charles; alternate, Dr. R. G. Cooper, St. Charles; censors, Drs. J. M. Jenkins, A. P. Erich Schulz and R. O. Hayden, St. Charles; council, Drs. J. M. Jenkins, B. K. Stumberg and V. A. Schneider, St. Charles.

Dr. G. Wilse Robinson, Kansas City, spoke on "Mental Health," illustrating his talk with motion pictures.

L. E. BELDING, M.D., Secretary.

##### FIFTH COUNCILOR DISTRICT

M. PINSON NEAL, COLUMBIA, COUNCILOR

##### Cole County Medical Society

The Cole County Medical Society held its annual meeting for the election of officers on December 14.

The following officers were elected: President, Dr. James G. Bruce, Jefferson City; vice president, Dr. W. W. Rambo, Jefferson City; secretary and treasurer, Dr. James A. Hill, Jefferson City; delegate for two years, Dr. Julian A. Ossman, Jefferson City.

The Cole County Medical Society had a successful year. As during the last twenty years, weekly meetings of the Dr. Clark Study Club were held. Monthly meetings of the staff of St. Mary's Hospital were also held.

A clinical meeting is being planned for February 21 on the subject of "Cancer" to be sponsored by the Cancer Committee of the State Association. Ladies' organizations of Jefferson City are cooperating to have a large public audience in the afternoon at which time the ad-



dressess will be broadcast over KWOS. In the evening speakers will address the Society and guests at St. Mary's Hospital. A dinner will precede the evening meeting.

The Society plans to cooperate in every way to make the Annual Session of the Missouri State Medical Association in Jefferson City in May a success.

JAMES A. HILL, M.D., Secretary.

#### Cooper County Medical Society

The Cooper County Medical Society met January 26 at St. Joseph's Hospital, Boonville, with Dr. T. C. Beckett, Boonville, presiding.

The following officers were elected: President, Dr. George W. Winn, Boonville; vice president, Dr. Arie C. H. Van Ravenswaay, Boonville; secretary-treasurer, Dr. J. C. Tincher, Boonville; delegate, Dr. G. L. Chamberlain, New Franklin; alternate, Dr. J. C. Tincher, Boonville.

The application of Dr. Aubrey H. Wells, Boonville, was approved and he was elected a member.

The plans for organizing a Society for Mental Hygiene in Cooper County were approved.

J. C. TINCHER, M.D., Secretary.

#### SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

##### Henry County Medical Society

The Henry County Medical Society met at Clinton, January 27, at 7:30 p. m. Those present were Drs. Thomas A. Blackmore and Robert J. Jennings, Windsor; Ray S. Hollingsworth, Shelby B. Hughes, Edwin C. Peelor, James O. Smith, George E. Walker and S. W. Woltzen, Clinton.

Dr. Clinton K. Smith, Kansas City, gave a talk on "The Prostate," illustrating with motion pictures.

Dr. A. Morris Ginsberg, Kansas City, followed with a talk on "The Heart."

Both talks were extremely practical and were discussed at length by the members. The Society expressed its appreciation for this program.

EDWIN C. PEELOR, M.D., Secretary.

##### Lafayette County Medical Society

The Lafayette County Medical Society met at the Public Library in Lexington on January 25.

Dr. Dudley S. Conley, Columbia, President of the Missouri State Medical Association, discussed "Modern Trends in Medical Practice."

Dr. M. Pinson Neal, Columbia, addressed the Society on "The Leukemias."

Dr. Harry F. Parker, Jefferson City, State Health Commissioner, spoke briefly on "The Organization of the State Board of Health."

E. S. WALLACE, M.D., Secretary.

#### SEVENTH COUNCILOR DISTRICT

E. P. HELLER, KANSAS CITY, COUNCILOR

##### Jackson County Medical Society

##### Group Hospitalization

The chief issue for the present year is the inauguration of group hospitalization in Kansas City and Jackson County. We have realized our dream of an executive secretary and business office for the handling of postpayments, credit rating, collections and other medical economic services. This whole program came during the year 1937. Jackson County has been fortunate too in having a central index which has functioned

well for years. Under the stimulus of Dr. Lockwood, our 1938 president, and the committee of Dr. J. Harvey Jennett this hospital program has been well begun and will certainly be consummated in 1938.

#### Timely Action of the A. M. A. Board of Trustees and Our State Council

On November 23, 1937, the Council of the State Medical Association adopted a resolution the purpose of which was to enable the A. M. A. to initiate and function in the development and adaptation of plans for medical care on a nation wide scale. Of this action the Council may now be justly proud since the minds of its members were following a channel marked by flares and buoys in the form of widespread discontent with the status quo, and recognized "late in December" by the Board of Trustees of the A. M. A. May this action be heartily endorsed by the House of Delegates of the A. M. A. To add our bit of praise and encouragement, the following resolution was adopted by the Council of the Jackson County Medical Society on January 18, 1938:

WHEREAS, The Board of Trustees of the American Medical Association has late in December, 1937, taken an action which may well mark the turning point in the attitude of medical organization from a negative to a positive phase, from fact finding to "initiating" and "developing," and

WHEREAS, The resolution of the Board of Trustees contains all the elements needed to "apply on a nation wide scale the best features of the numerous plans already in effect," thereby making it "possible for the organization to act specifically as a clearing house in the initiation, development and functioning of what may well evolve into a comprehensive system of medical care for all the people according to the American plan of medical practice" (from editorial, J. A. M. A. Jan. 15, 1938), and

WHEREAS, This identical aim was the purpose of the resolution unanimously adopted by the Council of the Missouri State Medical Association on November 23, 1937, therefore be it

Resolved, By the Council of Jackson County Medical Society, meeting this 18th day of January, 1938, that the Board of Trustees of the A. M. A. be commended in the highest terms for its forward looking action of December, 1937, and be it further

Resolved, 1. That this Council urge the officers, the Council and the House of Delegates of the Missouri State Medical Association to use all of their several agencies to promote wide knowledge and acceptance in the component units of the State Association of the proposals of the Board of Trustees of the A. M. A.

2. That this Council requests that endorsement of the action of the Board of Trustees of the A. M. A. be made a part of the order of business of the next meeting of the State Council and of the House of Delegates, and

3. That this action of the Council of Jackson County Medical Society be communicated to the Board of Trustees of the A. M. A., to the officers of the A. M. A. and of the Missouri State Medical Association, and published in the *Weekly Bulletin* of the Jackson County Medical Society.

(Signed) EDWARD P. HELLER.

#### Secretary for Health and Welfare

Not even in the matter of a cabinet officer has the Board of Trustees of the A. M. A. preceded the suggestions and recommendations of the doctors of Jackson County. On May 4, 1937, the Jackson County Medical Society voted approval of the following proposition and instructed its delegates to the Missouri State Medical Association session to present it for consideration if opportunity offered:

Let us place in a position of responsibility in government a member of the medical profession with cabinet rank, who shall have supervisory and administrative powers over the health of the people in its broad sense.

No action was possible at the Cape Girardeau Session because of the press of other matters more close to home, but now that the Board of Trustees of the A. M. A. has urged it, the profession in the Seventh District hopes that its proposition will be expressed in the form of a resolution at the Jefferson City session, urging approval by the A. M. A. House of Delegates of the Trustees' action. In one form or another this proposition has been turned down by the A. M. A. in past years.

### Medical Education

The profession of this state and of neighboring states is familiar with the activities of the Jackson County Medical Society's committee on education and of the Southwest Clinical Society's program for the coming year. A prospectus of each group's plans has been widely publicized through the medium of the *Kansas City Medical Journal* which goes to all members of the organized profession in this area.

We wish at this time simply to remind the profession of the opportunities offered in Kansas City each Tuesday from 10 a. m. until 9:30 p. m. at the General Hospital and at the Jackson County Medical Society's auditorium, and of the program to be presented on March 28 and 29 by the Clinical Society, the Spring Medico-Military Symposium.

### EIGHTH COUNCILOR DISTRICT

#### H. L. KERR, CRANE, COUNCILOR

##### Greene County Medical Society

The Greene County Medical Society met at Springfield December 17.

The following officers were elected: President, Dr. A. W. Gifford, Springfield; vice president, Dr. Charles E. Feller, Springfield; secretary, Dr. J. L. Johnston, Springfield; treasurer, Dr. R. Ned White, Springfield; delegate for 1938 and 1939, Dr. H. A. Lowe, Springfield; alternate, Dr. George M. Powell, Springfield; member board of censors, Dr. W. R. Beatie, Springfield (three years), Dr. Lee Cox, Springfield (two years), and Dr. T. E. Ferrell, Springfield (one year).

H. LEE HOOVER, M.D., Secretary.

##### Jasper County Medical Society

The Jasper County Medical Society met at Joplin on December 14 with the president, Dr. Paul Walker, Joplin, presiding.

The committee on arrangements for the annual dinner and installation of officers was announced as follows: Drs. O. T. Blanke, H. D. McGaughey and William M. Kinney, Joplin.

Dr. Ed. D. James, Joplin, chairman of the committee on by-laws, reported. After discussion it was agreed that dues of junior members be \$8 per year.

The following officers were elected: President, Dr. B. E. DeTar, Joplin; vice president, Dr. R. M. James, Joplin; secretary, Dr. M. H. Black, Joplin; treasurer, Dr. H. D. McGaughey, Joplin; censor, Dr. L. B. Clinton, Carthage; delegates, Drs. R. M. James and M. O. Coombs, Joplin; alternates, Drs. Jesse E. Douglass, Webb City, and B. E. DeTar, Joplin.

##### Meeting of January 11

The Society held its annual dinner meeting and installation of officers in the Empire Room of the Connor Hotel, Joplin, on January 11.

After an hour of fellowship eighty-nine members and guests sat down to a delightful dinner.

Following the dinner the officers for 1938 were introduced.

Dr. Logan Clendening, Kansas City, spoke on "Interesting Hospitals," illustrating the talk with lantern slides.

M. H. BLACK, M.D., Secretary.

### NINTH COUNCILOR DISTRICT

#### W. H. BREUER, M.D., COUNCILOR

##### Dent County Medical Society

The Dent County Medical Society met on January 13.

The following officers were elected: President, Dr.

William G. Dillon, Salem; vice president, Dr. John O. Ficke, Salem; secretary-treasurer, Dr. Fred E. Butler, Salem; delegate, Dr. Fred E. Butler, Salem; alternate, Dr. Lloyd H. Hunt, Salem.

F. E. BUTLER, M.D., Secretary.

### South Central Counties Medical Society

The South Central Counties Medical Society met at the Freeland Hotel, Houston, February 3, with the following members and visitors present: Drs. A. C. Ames, R. A. Ryan and R. W. Denney, Mountain Grove; E. C. Bohrer and E. R. Bohrer, West Plains; E. G. Beers, Seymour; R. L. Shobach, Rolla; C. F. Callihan, Willow Springs; J. B. McDaniel, Summersville; L. C. Randall, Licking; W. F. Herron, L. M. Dillman and W. A. Covert, Houston; C. K. Higgins, O. P. J. Falk and Andrew B. Jones, St. Louis.

Dr. O. P. J. Falk, St. Louis, spoke on "The Treatment of Hypertension and Its Complications."

Dr. C. K. Higgins, St. Louis, spoke on "The Present Day Therapy of Varicose Veins."

Dr. Andrew B. Jones, St. Louis, spoke on "The Neuroses or Mild Mental Illnesses," describing common conditions not generally thought of as disease or needing treatment but which do need understanding management more than drugs.

All three subjects were covered so fully that little was left for questions or discussion. A vote of thanks and appreciation was given the speakers.

Letters were read from Dr. E. R. Keen, West Plains, and Dr. H. A. Thompson, Lanton, telling of their advanced age, poor health and forced retirement from practice. It was voted they be made honor members.

The following officers were elected: President, Dr. A. H. Thornburgh, West Plains; vice president, Dr. W. T. Herron, Houston; secretary and treasurer, Dr. A. C. Ames, Mountain Grove; censor for three years, Dr. R. W. Denney, Mountain Grove. Delegates were reelected as follow: Howell County, Dr. A. H. Thornburgh, West Plains, alternate, Dr. P. D. Gum, West Plains; Oregon County, Dr. F. A. Barnes, Thayer, alternate, Dr. C. W. Cooper, Thayer; Texas County, Dr. L. C. Randall, Licking, alternate, Dr. L. M. Dillman, Houston; Wright County, Dr. R. A. Ryan, Mountain Grove, alternate, Dr. J. A. Fuson, Mansfield; Douglas County, Dr. R. M. Norman, Ava, alternate, Dr. M. C. Gentry, Ava.

The meeting adjourned to meet at a time and place to be chosen by the president and secretary.

A. C. AMES, M.D., Secretary.

### TENTH COUNCILOR DISTRICT

#### A. H. MARSHALL, CHARLESTON, COUNCILOR

##### Cape Girardeau County Medical Society

The Cape Girardeau County Medical Society met at the Colonial Tavern, Cape Girardeau, February 14, at 7 p. m., for a dinner meeting. Dr. B. W. Hays, Jackson, took the chair in the absence of the president and the vice president.

A letter was read from Dr. Ellis Fischel, St. Louis, State Chairman of the American Society for the Control of Cancer, concerning the organization of the Women's Field Army in the county, enlistment to take place April 1. The Society voted to endorse this work.

Dr. Lawrence Thompson, St. Louis, addressed the Society on "Pneumonia." This valuable and instructive address was well received and fully discussed. A standing vote of thanks was given Dr. Thompson for this most interesting lecture.

Those attending were Drs. Lawrence Thompson, St. Louis; B. W. Hays and D. I. L. Seabaugh, Jackson; U. P. Haw, Benton; Edward Crites, Sedgewickville; W. O.



Finney, Chaffee; J. J. Bredall, Perryville; W. J. Brenner, L. J. May, L. L. Pan, B. Glen, P. M. Nations, A. F. Barnett and J. W. Davis, Anna, Illinois; A. E. Lee, Illinois; W. W. Ford, Gordonville; W. Harry Barron, Fredericktown; G. Gannon, Fomfelt; Harry K. Tom, Delta; G. W. Walker, J. H. Cochran, O. L. Seabaugh, F. W. Hall, M. H. Shelby, R. A. Ritter, G. J. Tygett, D. B. Elrod, G. B. Schulz, W. H. Wescoat, H. L. Cunningham, C. Herbert, and D. H. Hope, Cape Girardeau.

CARL A. W. ZIMMERMANN, M.D., Secretary.

### Dunklin County Medical Society

The Dunklin County Medical Society met on January 25 at the home of Dr. E. L. Spence, Kennett, at 6 o'clock, for dinner.

Those present were Drs. W. D. English, Cardwell; S. E. Mitchell and John D. VanCleve, Malden; T. J. Rigdon, E. L. Spence and J. H. Keim, Kennett.

After dinner the Society was called to order by the president, Dr. W. D. English, Cardwell.

Officers were elected as follow: President, Dr. John D. VanCleve, Malden; vice president, Dr. E. G. Cope, Hornersville; secretary-treasurer, Dr. T. J. Rigdon, Kennett; delegate, Dr. E. L. Spence, Kennett; alternate, Dr. J. H. Keim, Kennett; censor for three years, Dr. S. E. Mitchell, Malden.

The Society passed several resolutions and many questions were discussed.

Several cases were reported.

After a social time the Society adjourned subject to the call of the president.

T. J. RIGDON, M.D., Secretary.

## WOMAN'S AUXILIARY

### WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

#### 16th Annual Meeting, San Francisco, 1938

President, Mrs. Augustus Kech, Altoona, Pennsylvania.

President-Elect, Mrs. Charles C. Tomlinson, Omaha, Nebraska.

### WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

#### 14th Annual Meeting, Jefferson City, 1938

President, Mrs. Charles H. Werner, St. Joseph.

President-Elect, Mrs. Herbert L. Mantz, Kansas City.

Mrs. C. H. Werner, president of the Missouri Auxiliary, and Mrs. E. E. Wadlow, St. Joseph, are preparing an exhibit for the state convention in May. After the convention the exhibit will be sent to the national convention in June. They ask that the following information be sent by county presidents together with two copies of the year books: Number of doctors in the county medical society; number of women eligible to membership in the county auxiliary; number of paid members for 1937-38; number of new members included above; in which of the following is the auxiliary most interested, essay contest, *Hygeia* promotion, public relations meetings, self education programs, social meetings or entertainment of physicians.

Mrs. David S. Long, Harrisonville, commander of the Women's Field Army for the Control of Cancer, is

receiving splendid cooperation from the Auxiliary members. Recently she attended a cancer meeting held in Sedalia by the Sorosis Club, arranged by Mrs. A. J. Campbell, Sedalia.

The regular monthly meeting of the St. Louis Auxiliary was held January 11 and designated as "Membership Day" with the membership chairman, Mrs. M. W. Gansloser, St. Louis, in charge. After luncheon Miss Edith Bateman, Superintendent of the Shriners Hospital for Crippled Children, St. Louis, spoke.

The Callaway County Auxiliary has an exceptionally clever year book made in the shape of the physician's bag. The bag has a zipper closing and programs listed are equally up-to-date. Among them are such topics as "Things We Should Know About Cancer Prevention," "The Control of Syphilis" and articles from *Hygeia*. At the public relations meeting held in November in conjunction with the Parent-Teacher Association, Dr. Charles H. Neilson, St. Louis, was the speaker. Mrs. R. C. Fagley, Fulton, was the first president of this Auxiliary which was organized in 1934; Mrs. J. B. McCubbin, Fulton, is president now.

The February luncheon and program of the Jackson County Auxiliary was held at the home of Mrs. C. B. Francisco, Kansas City. Dr. E. P. Heller, Kansas City, spoke on "Timely Topics Before the Medical Profession." Mrs. George H. Thiele, Kansas City, had charge of the program and Mrs. J. V. Bell, Kansas City, of the luncheon.

The Clay County Auxiliary has just finished its health essay contest, awarding among its prizes two subscriptions to *Hygeia*.

The Cass County Auxiliary has had two fine public relations meetings this year. The first was an evening dinner at the home of Dr. and Mrs. A. H. Baldwin, Pleasant Hill, given by the Cass County Medical Society with the Auxiliary as guests. The program following the dinner was open to the public which supplied a gratifying attendance. Dr. P. S. C. Wilson, Marshall, presented the problems of the feeble-minded; Dr. John J. Williams, Jefferson City, gave a talk on the service of the State Board of Health, and Dr. Wilson A. Myers, Kansas City, spoke on "Doctors and Diseases of the Revolution." The second public relations meeting was in December in Harrisonville. The topic was "The Health Program of the Social Security Act" and Dr. Dudley S. Conley, Columbia, President of the Missouri State Medical Association, spoke on the cooperation of the medical profession with this program. Dr. John J. Williams, Jefferson City, talked on the county health unit then being established in Cass County.

## BOOK REVIEWS

PRACTICAL PROCTOLOGY. By Louis A. Buie, A.B., M.D., F.A.C.S., Head of Section on Proctology, The Mayo Clinic; Professor of Proctology, The Mayo Foundation for Medical Education and Research, Graduate School, University of Minnesota. Illustrated. Philadelphia and London: W. B. Saunders Company. 1937. Price \$6.50.

Another book on proctology, and this one by none other than Buie of The Mayo Clinic—both names to conjure with! The title "Practical Proctology" is misleading and agreeably so for many of the books on this

subject issued under similar titles such as "Principles of Proctology," "Office Proctology," "Ambulant Proctology," etc., resolve themselves more or less into compendiums on hemorrhoids, fissures and fistulae and leave the reader with the impression that there is little else of rectal pathology worthy of consideration. The fact is, that is exactly the opinion held by a large percentage of medical men. To them a proctologist is a "pile doctor" just as in a not too remote past a urologist was a "clap doctor," both highly inadequate appellations. (Of course there are "pile doctors" and "clap doctors.") While Buie discusses hemorrhoids, fissures, and fistulae quite adequately, he does not glorify them to the discredit of other maladies, less common but more difficult to handle and frequently vastly more serious such as pruritis, colitis, amebic dysentery, malignancies, etc.

Throughout the book you are impressed with the fact that it is written by a scholar, not merely an operator, by a pathologist, not just a technician.

In his introduction Dr. Buie places the blame for the existence of the nonethical rectal specialists clearly on the profession itself. He thinks that it was the indifference, the neglect, the repugnance on the part of the regular physician that forced the sufferer from rectal disorders to seek relief elsewhere and prophecies that so long as this attitude persists just so long will these nonethical men thrive, and just so long will cancer of the rectum continue to be the scourge that it is.

R. D. A.

**EXTERNAL DISEASES OF THE EYE.** By Donald T. Atkinson, M.D., F.A.C.S., Consulting Ophthalmologist to the Santa Rosa Infirmary and the Nix Hospital, San Antonio, Texas, etc. Illustrated with 494 engravings. Second edition. Thoroughly revised. Philadelphia: Lea & Febiger. 1937. Price \$8.00.

In the second edition of this book on "External Diseases of the Eye" the author describes clearly each disease and many by illustrations. It is divided into fifteen chapters dealing with the following subjects: Ophthalmology relating to external eye diseases; diseases of the eyelids; the lachrymal apparatus; diseases of the orbit, conjunctiva, cornea, sclera, iris and ciliary body; glaucoma; diseases of the crystalline lens and external muscles of the eye; hygiene of the eye; history taking and case records, and remedies used in treatment of external diseases of the eye.

The section on nasal pathology involving the eye is informative and the well selected facts are clear and well presented.

The section on tumors of the orbit is well illustrated. Each tumor is clearly described and method of treatment given.

The author is to be commended for writing this book. From the standpoint of clinical usefulness it is one of the best books on external diseases of the eye. C. H.

**MENTAL THERAPY. Studies in Fifty Cases.** By Louis S. London, M.D., Formerly passed Assistant Surgeon (R) United States Public Health Service; Medical Officer United States Veterans Bureau; Assistant Physician Central Islip State Hospital, Central Islip, New York, and Manhattan State Hospital, Wards Island, New York. Volumes one and two. New York: Covici Friede, Publishers. 1937. Price two volumes \$12.50.

This work is made up of fifty case studies of assorted psychopathic conditions in varying degrees of detail. The studies are entirely from the psychoanalytic angle. Apparently the work has been conscientiously and competently done. The writer has had a great deal of experience and twice has been to the fountain heads in

Vienna. The style is clear and direct. This contribution should be of value to those who work in psychoanalysis or who are interested in gaining an insight into the methods, interpretations and results of psychoanalysis. L. B. A.

**PATHOLOGY.** By Eugene C. Piette, M.D., Pathologist and Director of the Clinical Laboratories of the West Suburban Hospital, Oak Park, Illinois; Consultant Pathologist, Chicago State Hospital; Assistant Professor of Pathology, College of Medicine, University of Illinois, Chicago, Ill. With 60 illustrations, some in color. Second revised and enlarged edition. Philadelphia: F. A. Davis Company. 1936. Price \$1.75.

Piette's textbook of pathology, designed especially for the nursing profession, is composed of 256 pages which have been well written in a direct and understandable manner. The discussion of the etiology of disease in the first chapter gives the reader an adequate classification and survey of the material at hand. The fundamental pathological processes are presented in a simple style and are followed by the pathological changes which are common to most diseases.

The later chapters stress the value of postmortem examination and explain the most important findings in the blood, urine, feces, sputum, etc., in relation to specific diseases. The instructions for the handling of specimens destined for the laboratory should be in the possession of every nurse.

Following each chapter the author offers a short summary and questions which doubly insure the reader of having obtained the essential points under discussion. The book is well illustrated. V. B.

**AN INTRODUCTION TO DERMATOLOGY.** By Richard L. Sutton, M.D., Sc.D., LL.D., F.R.S. (Edin.), Professor of Dermatology, University of Kansas School of Medicine, and Richard L. Sutton, Jr., A.M., M.D., L.R.C.P. (Edin.), Instructor in Dermatology, University of Kansas School of Medicine. Third edition. St. Louis: The C. V. Mosby Company. 1937. Price \$5.00.

The authors have offered an enlarged edition of this work which was first issued in 1932. The present edition contains forty-five new illustrations and includes a number of additional dermatoses.

Some of the new dermatoses included are so exotic that their inclusion seems hardly justified in a compendium of this sort. The illustrations are numerous and with few exceptions excellent.

Numerous references to the quite recent literature show that a thorough effort has been made to bring this edition up to date.

The unusually large number of popular names embodied in the text become annoying to the reader.

This compilation is an excellent one as compilations go. T. B. H.

**METHODS OF TREATMENT.** By Logan Clendening, M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas. With Chapters on Special Subjects by H. C. Andersson, M.D.; Ursulla Brunner, R.N.; J. B. Cowherd, M.D.; Paul Gempel, M.D.; H. P. Kuhn, M.D.; Carl O. Rickter, M.G.; F. C. Neff, M.D.; E. H. Skinner, M.D.; E. R. DeWeese, M.D.; and O. R. Withers, M.D. Sixth edition. St. Louis: The C. V. Mosby Company. 1937. Price \$10.00.

The sixth edition of "Methods of Treatment" has been brought up to date and is equally as complete as any book on treatment. Every practitioner can expect success in therapy if he will use the principles outlined in this text. W. G. B.



**THE BABY'S FIRST TWO YEARS.** By Richard M. Smith, A.B., M.D., Sc.D., Assistant Professor of Pediatrics and Child Hygiene, Harvard Medical School and School of Public Health; Visiting Physician, Children's and Infants' Hospitals, Boston. With illustration. New and revised edition. Boston: Houghton Mifflin Company. 1937. Price \$1.75.

The first edition of this book appeared in 1915 and has been revised and rewritten four times. It is essentially a book for parents, dealing with such subjects as growth and development, breast and bottle feeding, habits and training, with a brief description of some of the common diseases of early life. All of this is contained in seventy-five pages.

The reputation of the author assures the authenticity of the many helpful suggestions parents will find in this little book.  
H. L. D.

**THE MANAGEMENT OF FRACTURES, DISLOCATIONS, AND SPRAINS.** By John Albert Key, B.S., M.D., St. Louis, Mo., Clinical Professor of Orthopedic Surgery, Washington University School of Medicine; Associate Surgeon Barnes, Children's and Jewish Hospitals; and H. Earle Conwell, M.D., F.A.C.S., Birmingham, Ala., Consulting Orthopedic Surgeon to the Tennessee Coal, Iron & Railway Company and the Orthopedic and Traumatic Services of the Employees' Hospital, etc. Second edition. St. Louis: The C. V. Mosby Company. 1937. Price \$12.50.

A single volume of 1222 pages with an equal number of illustrations constitutes a rather unwieldy book to handle. However the incidence of bone injuries in the traumatic era in which we live demands full consideration of diagnosis, primary treatment and aftercare. The authors have succeeded in covering all three phases in detail.

The first section of the book is devoted to matters common to all fractures and affecting all surgeons handling skeletal injuries. It includes chapters dealing with the manner in which fractures and dislocations are produced, the physiology of bone repair, first aid and transportation of fracture patients and the complications encountered during subsequent care. One chapter describes fully the routine equipment desirable for a hospital expecting to handle fracture cases. The description of plaster of paris technic is valuable information for doctors, nurses and technicians employing this best of all immobilizing means which is too often abused in its application.

The last two chapters of Part I relate to economic features as affected by rulings of Workmen's Compensation Commissions and by medicolegal aspects of fracture cases.

Part II, the major portion of the book, considers "Diagnosis and Treatment of Specific Injuries." The authors have recognized the fact that in many communities fractures must be attended by physicians who are not bone and joint surgeons. The treatments described include the older, tried and true methods with less elaborate equipment as well as the later technics of precision. Open operations, bone grafts, metallic fixation of fractures of long bones, skeletal traction, ambulatory casts, flanged nails and metal spikes for fractures of hips, all receive full recognition. It is helpful to have the authors give various recognized technics and then express their own preferences as employed in their respective practices in widely separated portions of the country and among differing types of patients.

Chapters on fractures of the skull, of the bones of the face and of the spine have been rewritten in this new edition. It is refreshing to the reviewer to find emphasis placed upon prompt and thorough closed reduction of fractures and dislocations of vertebrae. The discussion of physical therapy in the aftercare of spinal in-

juries recognizes a phase in restoration to function that is all too frequently neglected.

The ever enlarging field of fracture surgery is amply covered in this second edition of a widely received text. The many illustrations are well reproduced making the subject matter graphic and easily followed.

T. P. B.

**SURGICAL PATHOLOGY OF THE DISEASES OF THE NECK.** By Arthur E. Hertzler, M.D., Surgeon to the Agnes Hertzler Memorial Hospital, Halstead, Kansas, Professor of Surgery, University of Kansas. 206 illustrations. Philadelphia, Montreal and London: J. B. Lippincott Company. 1937.

This well known author presents in this splendid monograph a text which should be in the hands of every surgeon doing neck surgery. The book is well illustrated with photographs of patients. The actual surgical pathology is carried through with illustrations of gross specimens and photomicrographs of the various lesions. The author maintains his interesting manner of writing and presenting subjects in the field of surgical pathology. This long clinical experience has assembled a worthwhile collection of material which is well presented. The chapters dealing with lesions of the lymphatic system are outstanding.

This monograph is not only of great value to the surgeon but to the teacher of surgical pathology as well.  
F. H. S.

#### PHOTOMICROGRAPHIC MOTION PICTURES

Albert S. Welch, Kansas City, Mo. (Journal A. M. A., Feb. 19, 1938), maintains that by means of the motion picture camera using 16 millimeter reversible film and the binocular microscope, good motion pictures of microscopic material may be obtained by the amateur photographer. But little additional equipment is necessary. Preparations for taking the picture must be made with great care. There are three problems to be solved: the light, the focus and vibration. The light from ordinary bulbs or substage lights is insufficient. The lamp with iris diaphragm as used for darkfield work is satisfactory. It should be set up as close to the reflecting substage microscope mirror as it can be focused, usually at a distance of from 6 to 8 inches. The plane mirror is preferable to the convex mirror. A piece of white paper may be placed on the mirror while the light from the lamp is being focused. It is focused by loosening a small set-screw at the side of the lower part of the lamp and moving the bulb thus loosened backward and forward until the image of the filaments on the paper is in focus. During this procedure, the iris diaphragm of the lamp is cut down to its smallest aperture. Vibration is of concern chiefly in wet preparations. The microscope and the camera should be mounted separately, with no point of contact. The base on which both rest must be solid. The top of a wooden laboratory table is not satisfactory. A good solid floor, near the wall, may prove satisfactory. Pictures may be taken either in black and white or in colors. In most instances the colored film is more satisfactory. Superspeed film for artificial light must be used, and the special color film for making pictures by artificial light must be used. Pictures of various material taken from time to time as the opportunity presents itself may be edited and given a main title, and sound may be supplied by a professional sound engineer. Although perfect synchronization is not as attainable in this manner as with sound-on-film, it is entirely satisfactory for purposes of description and special sound effects may be added. The sound-on-film requires a special projecting apparatus and there is considerably more expense involved in making the pictures. Furthermore, as yet it is almost impossible to get sound-on-film with colored motion pictures.

# THE JOURNAL

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### ACUTE HEMOLYTIC STREPTOCOCCIC GANGRENE OF SKIN AND SUB- CUTANEOUS TISSUE

J. G. PROBSTEN, M.D.

AND

CARL J. HEIFETZ, M.D.

ST. LOUIS

Acute hemolytic streptococcic gangrene of the skin and subcutaneous tissue was first described as a clinical entity by Meleney in 1924, when he reported twenty cases.<sup>1</sup> Since then reports by Lyle,<sup>2</sup> Fallon,<sup>3</sup> Mainzer,<sup>4</sup> Lautré,<sup>5</sup> Bate,<sup>6</sup> Gage,<sup>7</sup> Jen<sup>8</sup> and Meleney<sup>9,10</sup> have brought the total to fifty-two cases. It is quite likely that the cases described under the name of "necrotizing erysipelas" by Pfanner<sup>11</sup> and the cases of Fournier,<sup>12</sup> Seeman,<sup>13</sup> Hawkins,<sup>14</sup> Campbell<sup>15</sup> and Stirling<sup>16</sup> involving the scrotum and penis were of the same general type. Similarly the cases of Brissaud and Sicard, Lugeol and Dupont affecting the vulva, discussed by Bate,<sup>6</sup> may be a localized form of this disease. It is not certain if the cases of cutaneous gangrene described by Milian,<sup>17</sup> Bodin,<sup>18</sup> Nativelle<sup>19</sup> and Photinos and Relias<sup>20</sup> belong to this group or to the chronic non-specific synergistic type of skin gangrene known as "chronic progressive gangrene."<sup>21, 22, 23, 24</sup> At any rate, as a knowledge of the clinical picture becomes more disseminated, it seems likely that the disease will be taken out of the class of medical curiosities confined mostly to China as was first suggested.<sup>1</sup>

The following case is reported because of its occurrence in an infant 18 months old and because the treatment was unorthodox in that repeated blood transfusions alone were substituted for local operative procedures. The youngest previously recorded case was that of a 14 year old female.<sup>1</sup> The case of Levy<sup>25</sup> of cutaneous gangrene in a newborn child, involving a small patch on the thigh, had none of the findings generally associated with acute hemolytic streptococcic gangrene.

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### REPORT OF A CASE

*History.*—P. A. S., female, aged 18 months, weighing 24½ pounds, was admitted to the St. Louis County Hospital on June 28, 1935. The infant had never been ill prior to the present illness which began twelve days before admission with a scratch on the left knee. Three days later "three pimples" appeared at that site. Two days later the surrounding area became red, swollen and tender, forming a band of hyperemia around the thigh which was called "erysipelas" by the family physician. The lesion rapidly spread up the thigh and several large blisters formed. About the same time a similar spreading lesion appeared on the medial side of the left ankle, also resulting in blister formation. During this time the temperature varied between 101° and 104°.

*Physical Examination.*—On admission the patient looked quite ill and very weak. Temperature was 100.4° and pulse rate 130. The remainder of the examination revealed no important findings except in the lower extremity. This was swollen about half again normal size and was diffusely tender. The medial and posterior aspects of the left thigh were involved in a large, irregularly shaped erythematous lesion upon which were superimposed large bullae and blisters. On the dorsal and medial aspects of the left foot a similar process with two large blisters was present. The zones of inflammation faded in the normal color of the surrounding skin. Immediately to the left of the left labium majus was a swollen, red, tender area whose center presented a small purplish blister.

The true nature of the illness was not suspected at this time although a diagnosis of "streptococcus infection with ulceration" was made. Massive hot boric packs were applied and the patient was given general supportive treatment.

On the second hospital day the inflammatory areas were spreading. The bullae and blisters were opened and were found to contain blood-tinged serous fluid. The underlying skin was shiny and varied in color from purple to black. Temperature suddenly rose to 105°. White cell count was 20,500 with marked shift to left of Schilling.

On the third day temperature was around 105° all day. Patient severely prostrated and very critical. Pulse rate 150 to 160. All lesions were still spreading. Warm acriflavine packs were applied.

On the fourth day a diagnosis of acute hemolytic streptococcic gangrene was made. The question of multiple incisions arose, but it was felt that the patient would not survive a procedure of this magnitude. Since one of us<sup>22</sup> had previously used blood transfusions from immunized donors in a case of chronic progressive gangrene, we felt there was little to be lost by resorting to repeated small blood transfusions.





Fig. 1. Lesions as they appeared on the tenth day.

Dr. M. F. Engman, who was consulted, suggested that since there was no time to immunize a donor, the mother be injected with activin and her blood used. This was accordingly done and 100 cc. citrated blood was transfused.

On the fifth day cultures from the serous drainage revealed hemolytic streptococci. Direct smears showed short chain streptococci and a few gram-positive diplococci. There was no further spread of the lesions.

On the sixth day her general condition seemed a bit improved although the temperature remained high. A diffuse erythema was noticeable on the lower abdomen and right lower extremity.

By the seventh day the ulcer on the left thigh involved most of the anterior and medial aspects and had spread posteriorly to the lateral aspect. The skin margins were deeply erythematous and swollen. The medial and dorsal aspects of the foot were similarly involved and some of the lesion had covered the lateral malleolus. The vulvar lesion had involved most of the labium majus. Patches of necrotic skin and subcutaneous tissue were beginning to slough away. The viable skin edges frequently overhung areas of necrotic subcutaneous tissue. Pressure on the edges caused white creamy pus to exude. Figure 1, although taken three days later, shows the full extent and in general the characteristics of the ulceration.

Condition was about same on the eighth day. Temperature rose to 105.6°, the highest temperature of the illness. A small patch of erythema and swelling persisted on the right thigh and the right foot was somewhat edematous. The remaining erythema on the abdomen and right extremity had subsided. Citrated blood, 125 cc., was given.



Fig. 2. Muscles exposed by sloughing away of the necrotic tissue.



Fig. 3. Overhanging skin edges had lost their redness and had begun to adhere to the underlying tissue.

The lesions did not spread after the seventh day. By the tenth day more necrotic tissue had sloughed away and general condition was somewhat improved. Less prostration was noticeable although condition was still critical. Highest temperature was 103.2°. Edema of right foot cleared up.

Citrated blood, 125 cc., given on the twelfth day. Highest temperature 101°, pulse rate 120, W. B. C. 10,600.

The general condition was slowly improving. Most of the necrotic tissue had sloughed away by the fifteenth day exposing a large area of denuded bright red muscle whose fibers were so clearly outlined as to suggest an anatomical dissection (fig. 2).

Citrated blood, 150 cc., given on the eighteenth day. Condition was about the same. Wound cultures showed hemolytic streptococci and hemolytic gram-negative, non-motile, aerobic bacilli.

Blood culture was negative on the twenty-second day. Wounds were beginning to granulate. The overhanging skin edges had lost their redness and were beginning to adhere to the underlying tissue (fig. 3). Daily irrigations with equal parts of glycerine and peroxide were instituted. Acriflavine packs were continued.

Citrated blood, 125 cc., given on the twenty-fifth day. General condition was slowly improving. Temperature had fluctuated between 100° and 103° for previous week.

Citrated blood, 150 cc., given on the thirty-third day. Acriflavine packs were used during day; boric packs at night. Temperature for previous week varied between normal and 101°.



Fig. 4. The ulcers as they appeared on the forty-sixth day. (Medial view.)



Fig. 5. The ulcers as they appeared on the forty-sixth day. (Lateral view.)

Some pus could still be expressed from edges of wound on the thirty-seventh day. Granulations filling in slowly. Weight 18 pounds.

Citrated blood, 125 cc., given on the forty-sixth day. Temperature rarely went above 100.5°. Granulations were now filling in rapidly. Ulcers were smaller (fig. 4); vulvar ulcer almost healed; general condition greatly improved.

Only small band of granulation tissue remained about thigh by the seventy-fourth day. Gradual improvement in general condition. Patient was able to walk with help.

By the one hundred sixth day lesions were completely healed leaving large scars but very little contracture. Discharged from hospital.

#### DISCUSSION

Acute hemolytic streptococcic gangrene begins as a localized inflammatory patch of skin, usually after a relatively trivial trauma. The lesion spreads rapidly to involve the surrounding skin and subcutaneous tissue and at first resembles clinically a cellulitis or erysipelas. The redness usually fades at the margins into normal color. Sometimes the inflammatory reaction occurs in multiple irregular patches as it did in our case. The part becomes greatly swollen and tender. Accompanying the onset is a fairly high fever and sometimes a chill. About the fourth day blisters and bullae develop (these are almost pathognomonic) and break down exposing shiny, purplish areas of skin that soon become gangrenous. Extreme prostration, sometimes out of proportion to the height of the fever, is an almost constant observation. After a week some attempt at demarcation usually occurs, a seropurulent discharge is present, and it is possible to visualize some of the gangrenous subcutaneous tissue whose area of involvement is generally greater than that of the skin. Frequently almost whole extremities and portions of the abdomen, genitals, buttocks, shoulder and chest wall are affected.

In some untreated cases the process becomes self-limiting. With or without local treatment,

healing occurs by a slow separation of the areas of gangrene, sometimes in large masses, exposing as if by dissection large areas of muscles and sometimes blood vessels and nerves. Granulation tissue then appears and gradually fills the ulcer; following this epithelialization occurs. About a fifth of the treated and a majority of the untreated cases succumb to the overwhelming toxemia, pulmonary complications, septicemia, or metastatic abscesses; frequently a combination of these factors.

Hemolytic streptococci in short chains of two to five cocci are always recovered from the wounds. They occur in pure cultures in the blisters and bullae. They are more numerous in the areas of maximum involvement than along the spreading borders (contrary to occurrence in erysipelas). When the skin breaks down other micro-organisms are frequently found, but they are secondary invaders. The leukocyte count is always high, but varies greatly in the different stages of the illness. There is a corresponding shift to the left in the Schilling count. Hemolytic streptococci are recovered from the blood stream in a fair percentage of the cases, increasing the gravity of the prognosis.

Most writers, after the lead of Meleney, have agreed that, as soon as the condition is recognized, surgery offers the most satisfactory treatment. They recommend long incisions through the skin and subcutaneous tissue to the outmost limits of the subcutaneous necrosis. This relieves the tension and promotes more satisfactory drainage. Streptococcus serum therapy, the use of which has been suggested by Jen, Bettman and Bate, seems never to have been employed.

While our case does not adhere in its entirety to the above description, the essential features conform in general. In spite of the apparent lack of a fulminating onset, the clinical course after the patient entered the hospital and the recovery of hemolytic streptococci from the lesion seem adequately to substantiate the diagnosis of acute hemolytic streptococcic gangrene. The temperature of over 105°, while considered unusual for adults, would probably be expected in an infant.

The fact that we resorted to repeated small blood transfusions suggests the use of this method in other selected cases. We are not trying to persuade ourselves that this therapy was solely responsible for the infant's recovery, particularly since it is known that some cases are self-limiting; nevertheless, we cannot help but feel that it was of benefit since improvement was quite striking after its use. Many reports attest to the value of repeated blood transfusions in other types of streptococcic infections. This type of therapy for various prolonged and debilitating infections seems to have gained considerable support among pediatricians. We do not, however, offer it as a substitute for but rather as an adjunct to the usual methods of treatment both in children and adults. Should surgery seem inadvisable, one might find it necessary to place sole reliance in this method of



treatment. (Since this case was cared for, the use of sulfanilamide for streptococcic infections has come to the attention of the medical profession in lesions of this type.)

#### CONCLUSIONS

1. A case of acute hemolytic streptococcic gangrene of the skin and subcutaneous tissue is reported in an infant of 18 months. Recovery occurred following the use of repeated small blood transfusions.

2. The use of repeated small blood transfusions is offered as an adjunct to treatment, whether or not surgical measures are instituted.

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E. B. Vedder, Washington, D. C. (Journal A. M. A., March 19, 1938), states that the pathology of beriberi may be discussed under three heads: cardiac pathology, degenerative changes in the nervous system and anasarca. While much has been learned concerning the etiology of beriberi from animal experimentation, one should distinguish between the pathology of human beriberi and that of birds and animals.

## NECROSIS FROM HYPODERMOCLYSIS

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The subcutaneous injection of normal sodium chloride solution is a procedure common to nearly all modern hospitals. Untoward results are rarely encountered, consequently it seems worth while to report the following accident.

#### REPORT OF CASE

Mrs. W., aged 46, was operated on November 4, 1936, and a pathological gallbladder and appendix were removed without great difficulty. In order to keep up her fluids, 1000 cc. of normal saline solution was ordered injected subcutaneously in the thighs during the afternoon. At rounds the next morning the patient complained of pain in her legs, and examination showed an indurated, reddened area over the anteromedial aspect of each thigh. Over this area on the left thigh was a small blister.

The patient stated that when the injection was started the evening before she had complained of burning pain around the sites of the needles. For some inexplicable reason, perhaps because the patient was under the influence of morphine, this complaint was disregarded and the hypodermoclysis was continued.

These lesions had every appearance of having been produced by the injection of too hot a solution and they caused more distress than the laparotomy wound.

Sterile dry dressings were applied to both thighs and it was anticipated that spontaneous healing would occur.

Postoperative course was otherwise uneventful and the patient left the hospital November 29, 1936. There was an indurated area about 3 by 4 by 5 cm. in each thigh, and overlying the mass in the left thigh there was a dry crust about 3 cm. in diameter.

On December 7, 1936, the crust on the left thigh came away leaving a punched out ulcer approximately 2 cm. in diameter. This wound required frequent dressings until January 3, 1937. At this time the ulcer had decreased to about 1 cm. in diameter, but the necrotic looking base was giving off a foul discharge and the patient was complaining of some pain right around the ulcer.

In view of the slow rate of healing and of the possibility of further spread of infection in the necrotic tissue beneath the skin, it was deemed advisable to excise the entire indurated mass in one block. Under local anesthesia on January 5, 1937, an elliptical incision was made around the lesion and the indurated tissue was dissected out by blunt, finger dissection. The

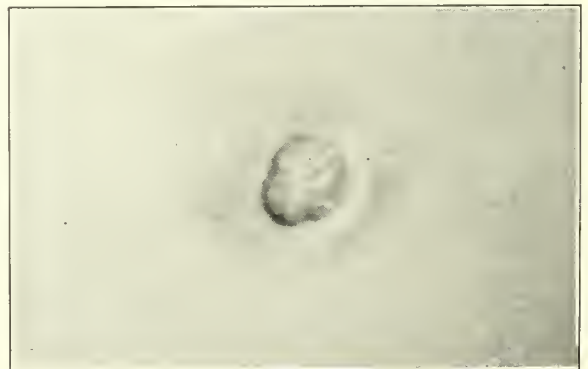


Fig. 1. Photograph of ulcer of left thigh, December 27, 1936.

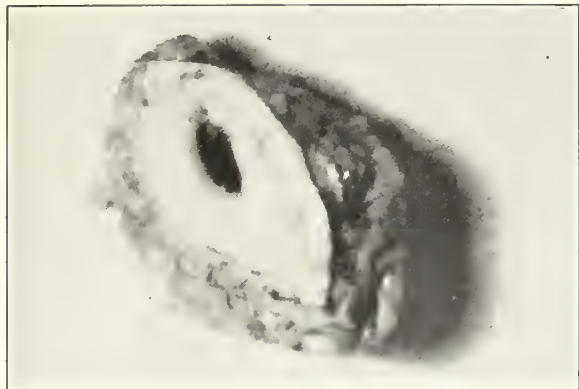


Fig. 2. Photograph of excised tissue, January 5, 1937.

wound was closed, leaving a small rubber drain. Within two weeks the wound was entirely healed.

On September 2, 1937, the patient was re-examined. In the right thigh an indurated, slightly tender mass was still present. It was about 2 by 2 by 3 cm. in size. On the left thigh was a scar approximately 7 cm. long.

Investigation of literature has not brought to light a similar case, although cases of tetanus, gas gangrene and fatal pyogenic sepsis have been reported following hypodermic injection.

#### CONCLUSION

Solutions for hypodermoclysis should be injected with due caution to prevent burns. A case in which such burns were accidentally produced is reported. Excision and suture of the sloughing, burned area is advocated as a method to hasten healing.

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#### USE OF HELIUM IN ANESTHESIA

Urban H. Eversole, Boston (Journal A. M. A., March 19, 1938), used helium during the induction or the maintenance of anesthesia in 110 cases. In most instances it was used for the relief of various types of respiratory obstruction, such as postoperative tracheal edema, compression of the trachea by postoperative hemorrhage and ordinary laryngospasm. In addition, it has been used a few times as an aid to breathing for patients with partial respiratory paralysis caused by spinal anesthesia. At the Lahey Clinic the indications for the use of helium are relatively few, as evidenced by the comparatively small number of cases in which helium was used even though it has been attached to the gas machines for more than two years. Of all patients for whom helium was used for the relief of stridor or obstruction, 87.6 per cent obtained either complete or partial relief and 12.4 per cent did not obtain relief. There is certainly no substitute for a clear and unobstructed airway, and the use of helium is not suggested as a substitute for unobstructed breathing. It is thought, however, that in certain cases this gas has been of distinct value in helping out in an emergency until a tube could be inserted within the trachea. It has also been helpful on many occasions by permitting one to continue smoothly and safely the administration of an anesthetic without inserting an intratracheal tube when otherwise one would have been necessary. Fortunately the experience at the Lahey Clinic with helium as an aid to patients with partial respiratory paralysis has been very limited, but in the few cases it has been a distinct aid to respiration.

## THE USE OF PROTAMINE ZINC INSULIN

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Since all modifications of insulin, with the exception of protamine zinc insulin, have now practically been discarded, we shall confine our remarks to describing the plan of using this preparation either alone or in conjunction with regular insulin as it has been adopted in the treatment of diabetes at the Firmin Desloge Hospital and outclinic, as well as in our private practice. This plan is based on experience obtained from an intensive study of twelve diabetics at the Firmin Desloge Hospital<sup>1</sup> and from the treatment of numerous cases since. We wish to acknowledge our indebtedness to Drs. Joslin, Olmstead, Wilder and others for the many valuable suggestions obtained from their writings.

Protamine zinc insulin alone, or fortified if necessary by regular insulin, is now the first choice in the management of cases of diabetes which cannot be controlled by proper diet alone. The employment of regular insulin is still given preference under the following circumstances: (1) In cases of diabetes doing well for a long time on one or two doses a day of regular insulin; (2) in new cases of a light form of diabetes which we expect to control with a single daily dose of regular insulin; (3) in patients not having sufficient time, patience or intelligence to master the somewhat more complicated technic of treatment with protamine zinc insulin or this and regular insulin combined; (4) in cases in which an emergency surgical operation renders the immediate control of the diabetic condition imperative; (5) in cases of diabetic coma in which the demand for insulin varies almost from minute to minute, the employment of regular insulin is still indispensable, although it is well to follow the injunction of Wilder and give a case in coma about 50 units of protamine zinc insulin at the outset and then treat the case with regular insulin in the same manner as though no protamine zinc insulin had been used.

**Diet.**—The diet scheme in the treatment of all our diabetics is as follows: In a patient doing very light work whose actual and normal weight are almost identical, we allow a number of daily calories equal to the body weight multiplied by 30. A patient weighing 154 pounds (70 kilos) would require 70 times 30, or 2100 calories a day. The necessary protein for one day is figured at 1 G. per kilo of body weight. Therefore, 70 G. a day would be the amount of protein for this patient. Seventy times four, or 280, will be the number of calories derived from the daily protein allotment. Subtracting 280 from 2100 leaves 1820 calories a day to be derived from the carbohydrates and fats of the diet. Following the method of Sansum, we have the grams of carbohydrates equal twice the num-

<sup>1</sup>From the Medical Department of the St. Louis University School of Medicine.



ber of grams of fat. Dividing 1820 by 17 will give 107 as the number of grams of fat in the diet. Twice 107, or 214, will be the number of grams of carbohydrate. So we have a daily diet of protein 70 G., carbohydrate 214 G., fat 107 G.; approximately, protein, 70 G.; carbohydrate, 200 G., and fat, 100 G. If a patient is much underweight or does hard work, we add calories to the daily allowance. If the patient is much overweight or of very sedentary habits, we deduct calories. The change in the number of daily calories is usually effected by varying the amount of fat. Should the number of grams of fat in the diet go below 60 grams a day, we prescribe Hepicolum or other vitamin A concentrate to avert a possible vitamin A deficiency.

To illustrate important points in the treatment of the various types of diabetes we have selected the following case histories from our records.

#### REPORT OF CASES

Case 1. This case shows how to treat diabetes in a patient who has never been on insulin. She came to the Firmin Desloge Hospital with a fasting blood sugar of 269 mg.; urine showed 4 plus sugar. Patient aged 63 years; present weight 190 pounds, ideal weight 154 pounds. Complications were abscesses of soles of both feet from infected callouses. Patient was put on a diet of protein, 70 G.; carbohydrate, 200 G., and fat, 100 G., calculated to slowly reduce her body weight. Protamine zinc insulin was started with 10 units daily before breakfast. The abscesses of course were incised. After three days the 10 units of protamine zinc insulin was raised every three days by 3 units. When 30 units of protamine zinc insulin was reached the urine was sugar negative and the blood sugar was 112 mg. After this no more change in the insulin was required.

Case 2. This is an example of a moderately severe case of diabetes treated entirely in the outclinic. She had previously received irregular and intermittent treatment with insulin so we started her out as though she had had no previous treatment. Her age was 19. Her weight was 105 pounds which was 14 pounds underweight. Occupation was stenographer. Urine was 4 plus sugar, blood sugar 339 mg. fasting. A diet of protein 65 G.; carbohydrate, 180 G., and fat, 90 G. was ordered, together with 20 units of protamine zinc insulin once a day before breakfast. After seven days of this treatment the urine was 3 plus sugar; the blood sugar 200 mg. fasting. Body weight had decreased to 99 pounds. Diet was now changed to protein, 78 G.; carbohydrate, 180 G., and fat, 106 G. Insulin was raised 5 units every three days. When the dose of protamine zinc insulin reached 40 units the blood sugar was 114, but the urine still showed 3 plus sugar. This was an example of low renal threshold for sugar. To have raised the insulin dose on account of 3 plus urine sugar when the blood sugar was normal would have been disastrous. Body weight was now 105. For several months patient has done well without any change in the insulin dose.

Case 3. This case illustrates how to change a patient whose diabetes is well controlled by regular insulin to protamine zinc insulin. This young woman has had diabetes for six years. It has been well controlled by proper diet and 57 units of regular insulin a day divided into three and at times into four daily doses. Age was 26, weight 149 pounds, slightly overweight. Inaugurating the change to protamine zinc insulin we left the diet the same and gave 30 units of protamine zinc insulin at the same time with 17 units of regular insulin once a day (before breakfast). After two days

of this we stopped the regular insulin and raised the protamine zinc insulin to 35 units once a day. After seven days of this dose the fasting blood sugar was 83. This was too low so we reduced the dose of protamine zinc insulin to 33 units and let the patient go home. One month later at the clinic it was necessary to make the protamine zinc insulin 35 units. This has controlled the diabetes now for many months. When changing a severe case of diabetes from regular to protamine zinc insulin it is well for a few days to supplement the units of protamine zinc insulin we wish to give with a small amount of regular insulin given simultaneously, for protamine zinc insulin will not have much effect on the blood sugar for two or three days.

Case 4. This very severe diabetic was not perfectly controlled by proper diet (protein, 79 G.; carbohydrate, 200 G., fat, 110 G.) and 87 units of regular insulin a day divided into three and four doses. He was tall and thin, underweight for many years. He had been in coma once. Present weight was 161 pounds; should have been 200 pounds. He was 52 years old. To switch him over, we gave him 45 units of protamine zinc insulin and 30 units of regular insulin once a day before breakfast administered simultaneously at different sites. After two days of this, we stopped the regular insulin and gave only 45 units of protamine zinc insulin before breakfast. This caused hypoglycemic shock at 3 a. m. and yet did not control the case. So we raised the daily dosage of protamine zinc insulin, giving it divided into two doses administered successively at many different hours of the day. But shocks still appeared. After many different procedures we finally hit on giving 40 units of protamine zinc insulin with 20 units of regular insulin once a day before breakfast. This has controlled urine and blood sugar now for many months. The patient needed 78 units of regular insulin daily in three or four doses, but gets along better on 40 units of protamine zinc insulin with 20 units of regular insulin given at the same time before breakfast.

Case 5. A surgical case under control as to diabetes by a daily dose of 12 units of protamine zinc insulin before breakfast, underwent a cholecystectomy without any change in insulin dosage except when a vicious circle of vomiting and acidosis occurred and necessitated 25 units of regular insulin in 1000 cc. of 10 per cent glucose given intravenously. This patient being much overweight had been for some weeks on a reducing diet, which may have had something to do with the low dose of protamine zinc insulin needed. Surgical diabetics well controlled by protamine zinc insulin can undergo operations without any change in the dosage. If they need any extra units as a result of the anesthetic or the operation, we supplement for a time the units of protamine zinc insulin by as many units of regular insulin as may from time to time be needed.

#### REMARKS

Protamine zinc insulin acts slowly. Not much can be expected from it for eight hours. When quick insulin action is desired it should not be relied on. Given before breakfast protamine zinc insulin has its strongest action at from 3 to 6 o'clock the next morning. Starting twenty-four hours after injection, the action of protamine zinc insulin gradually decreases but does not completely die out until after forty-eight or even seventy-two hours. Therefore as a rule no change in the daily dosage of protamine zinc insulin should be made except after three days. Hypoglycemic shocks from protamine zinc insulin given before breakfast occur usually at 3 o'clock next morning. Given before

supper protamine zinc insulin shocks occur usually about six or ten hours later. The variable hours at which hypoglycemia results are no doubt due to the variable rapidity with which protamine zinc insulin is absorbed. Shock symptoms from protamine zinc insulin may not manifest themselves until the blood sugar is dangerously low, a point to be remembered. Sugar or orange juice relieve hypoglycemia from protamine zinc insulin as rapidly as that from regular insulin. However, the symptoms of hypoglycemia from regular insulin once relieved usually stay relieved. With protamine zinc insulin they may recur in two hours. Therefore it is best when treating protamine zinc insulin hypoglycemia to add to the orange juice some more slowly digested carbohydrate like bread or gruel with milk. The symptoms of hypoglycemia from protamine zinc insulin are usually numbness, mental confusion, blurred vision, cardiac palpitation, headache or nausea. Sweating is much rarer with the use of protamine zinc insulin than with the regular insulin.

The advantages of protamine zinc insulin are that it usually accomplishes its purpose with 60 or 75 per cent of the number of units of regular insulin required, and instead of necessitating two, three or four injections a day as regular insulin does, protamine zinc insulin requires only one daily injection. If it has to be supplemented with regular insulin, both injections can be given at the same time although we must not mix the two insulins. We have found that before breakfast is the most suitable time for protamine zinc insulin alone or with regular insulin.

In the treatment of a case of diabetes requiring but not yet on insulin treatment, it is well to start with giving protamine zinc insulin once a day before breakfast. Let the initial dose be 5, 10, 15 or more units according to the severity of the case. Increase the units every three days until the case is controlled, or until hypoglycemia occurs. We ourselves have not been able to exceed a single dose of 50 units of protamine zinc insulin. When hypoglycemia occurs, diminish the dose of protamine zinc insulin by 5 units and if more insulin is then required, add units by regular insulin given simultaneously with the protamine zinc insulin. Of course you must not mix the two insulins in the same syringe. Bearing in mind the rather frequent occurrence of a low renal blood sugar threshold it is preferable, when possible to go by the blood sugar at 6 a. m., or better still at 3 a. m. rather than by the fasting urine sugar.

We still encounter cases of diabetes which seem to be better controlled by regular insulin than by protamine zinc insulin. They will probably become less frequent as the knowledge concerning protamine zinc insulin increases.

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## COLLAPSE IN PNEUMONIA

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The observations embodied in this talk are based on the review of 1590 cases of lobar, bronchial and influenzal pneumonia that have been admitted to my service in the University Hospitals of the University of Missouri in the last twenty years.

The mortality in these cases of pneumonia has been 14.6 per cent among the lobar pneumonias; 11 per cent among the bronchial pneumonias, and 13.6 per cent among the influenzal pneumonias, or, of the 1590 cases, 206 or 13 per cent died.

In reviewing the causes of death in these various types of pneumonia there has been a marked similarity in the mechanism of death in all these types. In only 8 per cent was there clinical or autopsy evidence that death was due to so great an obliteration of lung tissue that the lungs could no longer maintain their function in the preservation of life. The other 92 per cent died during a period of collapse.

Nineteen years ago I called attention to the phenomenon of collapse in pneumonia, and it is this phenomenon of collapse and some methods to control it that I now wish to discuss.

Collapse appears at three points in the course of a pneumonia: First, as shock accompanying the onset of the infection; second, during the height of the infection, and third, during convalescence.

We sometimes see the patient at the beginning of his sickness with subnormal temperature, subnormal blood pressure, pallor, sweating, a slow pulse, usually unconscious and, in children, sometimes in convulsions. Three times in this series have I seen this condition of severe shock before the physical signs of consolidation have appeared. In all three cases consolidation was limited to one lobe and the course of the pneumonia was not severe. This must be explained by some vasovagal disturbance in patients with an unstable vasomotor mechanism and an increased vagal tone that allows for an acute dilatation of the great venous reservoirs in the systemic circulation. This results in a collapse of the peripheral veins, a diminution of the volume of circulating blood, a faulty flow into the right auricle and, finally, a resulting cerebral anoxia and the interference with cerebral control over the body function arising from the viscera and traveling through sympathetic and parasympathetic nerves and the sensory visceral fibers of the vagus. This is the same vasovagal disturbance that we see in the common faint and in surgical shock, but, in one of the three cases mentioned, this condition, with unconsciousness, persisted for forty-eight hours.

In influenzal pneumonia, the lesser degrees of shock are frequently observed at the time of inva-

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sion, differing in that there is a stagnation of the blood in the pulmonary as well as in the systemic circulation, and that there is a permeability of capillaries in the lungs due to this stagnation and the rapid amyloid degeneration that is characteristic of influenza. This adds the loss of fluid and salt as a causative factor in toxic shock in influenza.

The common picture of disaster in pneumonia is collapse at the height of the intoxication. It comes later, progresses more slowly, lasts much longer and usually ends fatally. Here we have a patient that slowly develops a shock-like condition after the body tissues have become dehydrated due to the gradual development of capillary permeability, increasing the concentration in the small mass of effective blood of the accumulation of local metabolites. This results in the production of acidosis which is further helped by dehydration and anoxia of tissues. This also results in venous collapse and low arterial pressure (although low arterial pressure may be and often is a late phenomenon), central nervous system dysfunction and impaired kidney function sometimes leading to anuria.

All this represents a vicious circle in which the vascular activity and the blood volume on one hand, and the central nervous system's phenomena on the other, are in close relationship. One or the other of these factors, with its effect upon the heart which is contracting on half-empty chambers, with the threatened imbalance of the ventricles and the resulting pulmonary edema, is the picture that predominates in nearly every pneumonia death.

The symptoms of collapse are: Restlessness; a fall in venous pressure with a collapse of peripheral veins followed sooner or later by a drop in arterial pressure with an increasing pulse rate; fast, shallow respirations with the resulting cyanosis, and anoxia due to a lowering of the residual air in the pulmonary structure and a poor ventilation of pulmonary alveoli. These are the symptoms of beginning collapse which rapidly or slowly progress to delirium, rapid dehydration, deep cyanosis, pulmonary edema and death.

There is a form of collapse that appears during convalescence. In my series this has occurred only in patients over 60, all of whom were satisfactorily convalescing from mild, lobar pneumonia. The fever had been normal for from twenty-four to seventy-two hours and the physical signs of resolution of the consolidation had appeared. These patients suddenly became restless, nausea, vomiting and sweating developed, the pulse slowed and they complained of epigastric pain. They quickly became dehydrated and a dilated stomach or ileus, or both, have been present in every case and was the most obvious symptom. All these cases ended in death.

The probable explanation of collapse at this stage is that an elderly person with a previous senile or diseased cardiovascular system cannot stand the battering of toxic and nervous stimuli, so that in spite of the benignness of the pneumonic

process and the established immunity to the infective organism, they die a vasovagal death that is principally vagal, as evidenced by nausea and vomiting, a dilated stomach, drenching sweat and a slow pulse.

The treatment of collapse in pneumonia is based upon the early recognition of the onset. The appearance of toxic shock during the period of invasion presents little difficulty. However, there often is difficulty in determining that pneumonia is the causative factor in the condition of shock.

In the shock at the onset position is of great importance. A slight elevation of the foot of the bed assuring proper cerebral circulation, plus warmth to prevent too great a dissipation of heat, and vasomotor stimulants as medication usually brings a prompt recovery from shock. I never have seen a fatality or a threatened fatality from toxic shock at the onset of pneumonia.

Recognition of the onset of collapse at the height of the disease is of greatest importance. It should be recognized that collapse is a common occurrence at the height of intoxication in pneumonia and is a signal of impending disaster; that its cause is the insult to body viscera by bacterial toxins, and that this insult transmits a bombardment of stimuli through the visceral sensory divisions of the vagus nerve and the sympathetic and parasympathetic chains to the brain and to the vasomotor apparatus.

Realizing that collapse may develop, as we have described it, the symptoms of collapse should be anticipated not by the use of cardiac stimulation. If you will bear in mind the picture of the heart in early collapse, slowly and vigorously contracting on half-emptied chambers due to the diminution of the effective mass of circulating blood, we can see that the heart does not need support, but that the vasomotor apparatus needs stimulation to prevent the loss of blood into the large venous reservoirs within the body. Therefore, the various stimulants such as caffeine, camphor, ephedrine, strychnine, benzedrine, etc., should be used when the physician feels that the patient is so toxic that collapse might result.

It should be borne in mind that rapid, shallow breathing, as is often seen due to pleural pain in pneumonia, leads to cyanosis (with its poor oxygen supply to tissues and its resulting acidosis), to cerebral anoxia with restlessness and delirium, and the vagus phenomena of vomiting, intestinal distention and even dilatation of the stomach.

The physician should remember also that in severe intoxication of the body, particularly with the influenzal virus, there is a great loss of blood serum through capillaries that are too permeable; that not only is there loss of body fluid in this event, amounting often to more than 2 per cent of the total fluids of the body, but there is also a great loss of protein material.

Again, due to vasomotor collapse, to injury of the heat regulating center in the brain and to evaporation of sweat, the surface of the body is usually

chilled and the surface temperature may be very low in spite of the high internal temperature so that the body surface must be maintained at a temperature normal or above.

Bearing these six factors in mind, i. e., the insult to the central nervous system, the vasomotor breakdown, the small mass of circulating blood, the cyanosis from shallow breathing, the dehydration and the acidosis, the physician should be on the lookout for restlessness, which is a beginning cerebral involvement, for empty peripheral veins, for cold fingers and toes and for a subsequent cyanosis of fingers and toes, as these signs with the facies of dehydration indicate a beginning vasomotor collapse. A normal arterial pressure should not comfort him as this condition can be present with a bounding pulse and normal arterial pressure.

Subsequent symptoms which should be watched for are: An increase of restlessness and mental confusion; the sudden onset of vagal irritation which manifests itself by the appearance of goose flesh on the skin; pain in the epigastrium due to pyloric spasm, and by vomiting. Cardiac slowing is associated with this.

With these vagal symptoms just enumerated, vasomotor collapse may be evidenced by rapid dehydration, falling arterial pressure and a failing kidney function. If the patient is not rescued at this point an imbalance in ventricular function within the heart develops followed by pulmonary edema and death.

This ventricular imbalance does not develop as a cardiac failure but is due to faulty delivery of blood to the right auricle as a result of further collapse in the systemic venous system.

We can sum up our treatment as follows:

First: Attempt to forestall vasomotor collapse, vagal irritation and exhaustion; protect the patient against an overwhelming intoxication by attempting to prevent the formation of toxin and encourage its elimination through the kidney and through the skin; and at the same time attempt to maintain a stimulation of the vasomotor apparatus.

For nineteen years, on my service, we have used large doses of camphor throughout the period of intoxication of pneumonia as it increases sweat and the urinary output, and we believe it to be an excellent vasomotor stimulant. It is not a cardiac stimulant. Other vasomotor stimulants may be used, as mentioned above, such as caffeine, strychnine, ephedrine, etc. These should be given early and continuously.

Second: The deficiencies should be supplied. Salt and water, as normal saline, should be supplied to substitute for a daily loss of from 7000 to 10,000 cc. Glucose solution should be given. The effective circulating mass of blood should be restored by transfusion. This is sometimes life saving and if there is severe capillary leakage or extensive venous collapse this should be repeated frequently. Oxygen to relieve the anoxia of tissues plays a specific role. It should be started

with the first evidence of cyanosis. It is our best control of acidosis.

If there is a great loss of fluid through capillaries the protein loss must be made up, but this is taken care of by transfusions.

Body surface must be kept warm and, lastly and not the least important, is the relief of fear, pain and the sleeplessness and restlessness that come from fear and from pain. There is no satisfactory substitute for morphine for this purpose.

For the middle-aged or elderly person who collapses during convalescence there seems to be no satisfactory treatment as death seems inevitable. However, a place will be found for nearly all the above procedures and they should be carried out.

In concluding, I want to emphasize that success in treatment in pneumonia means constant watchfulness and having the means at hand to care quickly for any of the deficiencies present in collapse, because more patients are lost through faulty vision and indecision than from a lack of knowledge on the part of the attending physician.

#### THE TENTH OR VAGUS NERVE

The vagus is a mixed nerve containing motor, sensory and visceral fibers. The motor fibers to the striated muscles of the pharynx and larynx are derived from cells in the nucleus ambiguus; those for the nonstriated muscles of the viscera arise from cells in the dorsal motor nucleus of the vagus. The nerve receives some motor fibers from the spinal accessory. The superficial sensory fibers, arising in the jugular ganglion and terminating in the sensory dorsal nucleus and the spinal nucleus, innervate peripherally by way of the auricular nerve, the back of the tragus and part of the external auditory meatus. The visceral sensory fibers arise from the ganglion nodosum and supply the pharynx, epiglottis, larynx, trachea, esophagus, thoracic and abdominal viscera.

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Harry Tabachnick, Milwaukee (*Journal A. M. A.*, March 19, 1938), discusses the recent advances pertaining to etiology, treatment and diagnosis of myasthenia gravis. Interest in the undetermined etiologic role of the endocrines is further enhanced by the consideration of myasthenia gravis associated with pregnancy. In the case of myasthenia gravis cited myasthenic weakness had its onset after childbirth, and the myasthenic facies with exaggeration of symptoms was observed to set in during the early course of the next pregnancy. Myasthenic weakness may precede the myasthenic facies. Prostigmine is a valuable drug in both treatment and diagnosis of myasthenia gravis. It is suggested that prostigmine may be of aid in the diagnosis previous to the onset of the myasthenic facies; that is, when the malady is in what may be termed a stage of incipience. There is need for more determinate information on myasthenia gravis with pregnancy.



## INTRAVENOUS THERAPY

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Intravenous therapy has been employed for almost 300 years but is better understood now than previously. The scientific foundation for this method of treatment was laid when it was recognized that in Asiatic cholera there was a deficiency of saline material in the blood and that saline infusions were efficacious in combating this deficiency. Harvey's demonstration of the circulation of the blood stimulated interest in transfusion of blood. Intravenous therapy is of great value.<sup>2</sup> However, it may be abused by using it when older and simpler methods could be used just as well. Intravenous therapy usually is considered for the following purposes: (1) To replace lost blood or fluid; (2) to overcome dehydration of tissues; (3) to produce dehydration in certain instances, and (4) to aid chemotherapeusis.

Delicate physiologic processes control the volume of circulating fluids as compared to the total fluid of the body. The following factors are involved: (1) The plasmic corpuscle relationship remains fairly constant regardless of ingestion or excretion of fluid. Maintenance of this relationship is necessary for an efficient circulation. (2) The number of corpuscles remains constant under the same oxygen tension. That they remain constant is necessary because a constant relationship between oxygen-carrying capacity and utilization of oxygen must be maintained. (3) In general, urinary secretion is in direct proportion to ingestion of fluid. Recognition of this fact is essential because the kidney can function only by passage of a fluid medium. (4) The relationship between the amount of fluid in the cell and the fluid surrounding the cell is maintained. (5) Various constituents of the blood, which are essential in the bodily economy and for which blood is the medium of transportation, of necessity have a very limited range of concentration. Blood sugar is an example. The physiologic processes compensate immediately to keep the various constituents of the blood in their natural proportions. If the physiologic processes of the individual are normal, intravenous therapy can be carried on with a considerably larger margin of safety than when pathologic conditions of the body interfere with functioning of constituents of the blood and with control of the blood volume and blood pressure.

Important points in intravenous therapy are (1) The proper, chemically pure substances should

be procured from a reliable source. (2) Pure, sterile water should be employed and the water must be from a satisfactory source. (3) Since the strength of the solution depends on the purpose of its administration, hypotonic or markedly hypertonic solutions generally should not be administered. An exception to this arises when it is desired to obtain the dehydrating effect of hypertonic solutions for a specific purpose. (4) Clean, sterile apparatus should be used and proper precautions should be taken to prevent toxic material from coming in contact with the apparatus. (5) Both the solution and the apparatus should be thoroughly sterilized. (6) The rate of injection should be controlled since this is important in connection with the proper physiologic compensations. Injection should be at the rate of from 75 to 100 drops per minute.

The quantity of blood in the body is usually in a definite proportion to the body weight. The weight of blood is approximately 7 per cent, or a fourteenth, of the body weight. This proportion usually holds except in extreme conditions; for instance, (1) when a great amount of blood has been lost, (2) when marked dehydration is present, (3) when the excretory mechanism has failed and fluid has accumulated in the body. Normally it is difficult to increase or to decrease the volume of the blood for any length of time because of the mechanism for interchange of fluid possessed by the body. Excess fluid is rapidly excreted and, conversely, deficiencies of fluid are rapidly compensated for by filtration of fluids from the tissues into the capillary bed. It can be assumed that the blood contains approximately 23 per cent of solids and the solids of most importance which can be administered parenterally are sodium chloride, dextrose, acacia and the various alkalizing agents which combat acidosis. The solid content of the blood, particularly the saline content, is an important governing factor in the interchange of fluids between the cellular tissues and the blood stream. Intravenous injection of a solution tends to encourage retention of the solution in the blood stream, thereby temporarily increasing the blood volume, particularly if the blood volume is less than normal. It must not be inferred, however, that maintenance of blood volume is the only indication for intravenous administration of fluid. Under conditions such as circulatory reactions resulting from toxemia, shock or systemic infection, this type of therapy is useful. It can also be used preoperatively and postoperatively to reduce surgical risk and as a supportive measure following surgical procedures.

Fantus has recorded the following conclusions regarding intravenous administration of dextrose in the course of various clinical conditions:

1. In all very sick patients an adequate income of water, sodium chloride and dextrose should be taken care of as a routine procedure before rather than after a high degree of deficiency has occurred.

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From the Sections on Anesthesia and Clinical Biochemistry of The Mayo Clinic, Rochester, Minnesota.

2. This, in cases in which adequate oral administration is impossible, can generally best be accomplished by dextrose phleboclysis, the composition of which should be determined by the individual indications present.

3. For combating hypohydration and for the relief of thirst, 5 per cent dextrose solution in distilled water seems preferable.

4. Whenever salt starvation is threatened or present, dextrose-saline phleboclysis should be practiced.

5. Whenever carbohydrate cannot be ingested or digested to a sufficient degree, 10 per cent dextrose phleboclysis should be resorted to.

6. In poisoning with diffusible poisons, the diuretic and possible liver protective action of dextrose phleboclysis adds itself to the foregoing therapeutic values.

7. Concentrated (25 per cent) dextrose solution may be of value in certain internal hemorrhages, in inflammatory and exudative pulmonary edema, to lessen intracranial pressure (unless there is cerebral hemorrhage) and possibly in myocardial weakness.

8. During phleboclysis, other remedies may be conveniently infused; e. g., antisera, epinephrine, insulin, iodide, sedatives and stimulants.

Solution of acacia is administered in the presence of shock, whether surgical or not, in the same way that blood is administered, and is used as a substitute for blood when the condition of the patient is not critical enough to require transfusion of blood. It may be used until blood can be obtained, but must not be mixed with blood in the device through which it is administered for it will cause the blood to clot in the buret, tube and needle. If transfusion of blood is to be followed by administration of acacia the blood must be washed out, or if administration of acacia is to be followed by transfusion of blood the acacia must be flushed out of the apparatus. The amount of solution of acacia usually given at one time is 450 cc.; the solution used is 6 per cent of acacia in a 0.9 per cent solution of sodium chloride.

Transfusion of citrated blood will be discussed because to us and to others<sup>5, 7, 9, 16</sup> it seems to be the method of choice. Two types of donors are used: professional and nonprofessional. Professional donors are classified as to groups according to both the Moss and the Landsteiner classifications; a flocculation test is done and the donor is subjected to physical examination. Leukocyte and erythrocyte counts are made and the value for hemoglobin is determined from time to time. Each professional donor is used about six times a year, usually at intervals of two months.

The blood is drawn and citrated in the transfusion room or operating room. The arm is surgically prepared and a needle of from 13 to 15 gauge is used. To it is attached 10 inches (25 cm.) of specially processed rubber tubing that has a relatively narrow lumen through which the blood will run rapidly. There is less likelihood of the blood clotting when the flow is speeded up. When the needle tends to occupy almost all of the lumen of the vein, the needle should be introduced so that

it points in the opposite direction to the flow of venous blood. When the veins are large, the needle can be introduced with or against the venous stream, except in drawing polycythemic blood in which case the needle usually is pointed opposite to the direction of flow. Blood in the amount of 500 cc. is allowed to run into a graduate containing 50 cc. of physiologic saline solution and 18 grains (1.2 gm.) of sodium citrate. This solution is agitated with a stirring rod while the blood is being mixed with it. The citrated blood containing 0.25 per cent sodium citrate can be used immediately or it can be poured into a container and kept in an icebox at 45° F. for as long as ten or twelve days. It is important, when refrigerated blood is used, that it be taken from the refrigerator, warmed to body temperature and used immediately. It must not remain long in a warm room as it will become unfit for use and the patient will have marked reaction with chills, fever and the like following its use.

Certain large, vigorous men can donate from 750 to 1000 cc. of blood at one time. The average man, who is not a professional donor, can give 500 cc. of blood twice in one week if no more blood is required of him for at least two weeks. A professional donor should not donate more often than once in a month or two. Small individuals usually feel faint after withdrawal of 500 cc. of blood. The quality of blood obtained from such persons may be as good as that from larger subjects but the effort of such donation is not always advisable for the donor. When donors are selected, one requisite is that they have good veins for venipuncture. All professional donors are examined from this point of view and are classified as to whether their veins are excellent, good, fair or poor. Only group IV donors, who have excellent veins, are called in emergencies.

The technic of administering citrated blood does not vary particularly from that of administering physiologic saline solution or a solution of dextrose, except that someone should time the rate of flow of the blood and limit it to 15 cc. or less per minute; if the patient complains of distress, administration should be stopped, at least until the patient's condition improves. If administration is started again, the rate must be slower than before. If more than 500 cc. of a solution is to be administered intravenously a Murphy drip device should be introduced into the feed line and the rate of intravenous administration should be about 75 drops per minute. Blood may be administered in this way also, but usually the method is used only when massive transfusion is given (1000 cc. or more).<sup>13</sup>

Certain untoward symptoms may appear, the most bizarre of which is urticaria. This condition can be treated by hypodermic injection of epinephrine. The most serious complication of transfusion, obviously, is clotting of the donor's corpuscles by the recipient's serum. In some cases it



will be found that cross matching is necessary. Untoward results can be avoided if the transfusion is stopped immediately on complaint of symptoms of distress by the patient. Occasionally the onset of symptoms is delayed and in such cases they usually are not necessarily dangerous, although they are distressing and undesirable. When blood that the patient will tolerate cannot be found by grouping and cross matching, then the blood can be given intramuscularly in small doses, over a period of two or three days, usually with definite benefit. In certain chronic conditions we have found some advantage in drawing 500 cc. of blood at one time and in administering it in divided doses rather than in a single dose of 500 cc. It is not necessary to consider the question of using special donors for immunotransfusions and the like<sup>15,18</sup> as this procedure has not yet been sufficiently developed. Small children and babies often are benefited by transfusion. However, if difficulties are present, blood may be given intramuscularly. The dosage of various agents safely tolerated by an individual is shown in table 1.

Previously reported data<sup>4, 8, 10, 11, 12, 17</sup> have disclosed the relative frequency of reactions, differing in severity, in cases in which blood of donors of various groups has been transfused into recipients of various groups.

The signs of an untoward reaction are not so obvious if the individual is anesthetized than if he is not anesthetized. Among small children the use of pentobarbital sodium (nembutal) in doses sufficient to keep the patient quiet has facilitated the transfusion of blood, making the procedure relatively easy. Before intravenous therapy is carried out on very nervous adults, especially hysterical women, it may be advantageous to use preliminary medication.

One of us has mentioned previously certain procedures which facilitate venipuncture:<sup>6</sup> "In some cases venipuncture has been difficult until certain aids were devised and used. . . . The application of moist heat to an extremity is a valuable aid, but it is not effective unless, when a vein in the upper extremity is to be punctured, the hand, wrist, forearm and the arm to a point above the elbow are enveloped in a warm, moist Turkish towel with an outer wrapping of oil skin or rubber and unless hot water bottles are laid against the rubber covering. . . . With the extremity in the dependent position and after about twenty to thirty minutes' application of heat in this manner, the hand, wrist, forearm and arm become congested with blood so that, when the tourniquet is applied, the veins stand out prominently. The common failure of this measure is attributable to the fact that usually the moist heat has been applied to the elbow but not to the hand, wrist and forearm and so fails to accomplish its purpose." One reason for enveloping so much of the extremity is that the use of heat in this manner dilates the largest possible number of veins. Otherwise venipuncture is difficult. "The second point is that when the arm is uncovered, if cold alcohol or antiseptic solution is applied to the skin through which the venipuncture is to be performed, the arm, because it is warm, is more than usually reactive to cold and the reflex effect to the cold solution causes the vein to contract almost immediately. A third point is that of making venipuncture less painful. . . . The needle used for making the wheal should be advanced near to the vein and 0.5 cc. of a 1 per cent solution of procaine hydrochloride should be deposited near the vein so that the wall of the vein is anesthetized, thus rendering venipuncture painless. In infants and other subjects with exceedingly small veins only a

Table 1. For the Average Person; Safe Dosage of Various Substances for Intravenous Administration, in cc.

Substance	Age of Patients								Remarks
	3 mos. and younger	6 mos.	1 yr.	2 yrs.	5 yrs.	10 yrs.	15 yrs.	20 yrs. and older	
Blood									
Acacia 6%	75	100	150	200	250	300	400	500	May repeat after 12 hrs.
NaCl 0.9% (phys.* NaCl)									
Dextrose 5% in phys.* NaCl									
Dextrose 10% in phys.* NaCl									
Dextrose 5% in aq. dest.	100	150	200	300	350	500	750	1000	
Dextrose 10% in aq. dest.									
Hartmann's solution									
Dextrose 20% in aq. dest.									
Sucrose 25%	75	100	150	200	250	300	400	500	Give very slowly
NaHCO <sub>3</sub> , 5%									
Dextrose 50% in aq. dest.			5	10	25	50	75	100	To reduce intracranial pressure

\* Physiologic

small amount of blood may be aspirated before the vein collapses and it is then necessary to remove the tourniquet and inject saline solution to be sure the vein has been entered properly. When daily venipuncture is necessary it is often useful to draw a line an inch (2.5 cm.) or more in length on the skin overlying the vein with a dye or a solution containing a dye. The color usually will remain on the skin for two or three days and will indicate the location of the veins that may be needed. For very nervous and excited individuals a sedative, such as pentobarbital sodium (nembutal), may be administered to calm them and to minimize movement of the extremities. This is advantageous especially since the barbiturates tend to produce peripheral vasodilatation and an increase in temperature of the extremities. . . . Veins are available in several parts of the body."

Table 2. Composition of Human Blood

Constituent	Normal range, mg. per 100 cc.
Total solids, per cent	19-23
Total proteins (serum) per cent	6.5-8.2
Albumin (serum) per cent	4.6-6.7
Globulin (serum) per cent	1.2-2.3
Hemoglobin per cent (Haden)	15.6
Urea N	10-15
Uric acid	2-3.5
Glucose	70-100
Total fatty acids	290-420
Cholesterol	150-190
Lipoid phosphorus (lecithin)	12-14
CO <sub>2</sub> capacity (plasma) vol. per cent	55-75
Chlorides as NaCl	450-500
Sulphates, inorganic as S	0.5-1.0
Phosphorus inorganic (plasma)	3-4
Calcium (serum)	9-11
Magnesium (serum)	2-3
Sodium (serum)	330
Potassium (serum)	16-22

Table 3. Composition of a Normal Urine Volume (24 Hours) 1500 cc.

Constituent	Absolute weight, gm.	Approximate percentage
Water	1440.0	96.0
Solids	60.0	4.0
Urea	35.0	2.33
Uric acid	0.75	0.05
Creatinine	1.0	0.07
Sodium chloride	16.5	1.1
Phosphoric acid	2.5	0.15
Total sulphuric acid	2.5	0.15
Potassium (K <sub>2</sub> O)	2.5	0.15
Sodium (Na <sub>2</sub> O)	5.0	0.3
Calcium (CaO)	0.25	0.015
Magnesium (MgO)	0.30	0.02

The erythrocyte count, the value for hemoglobin and the hematocrit reading are guides in determining the amount and frequency of transfusion of required blood. Examination of the blood (table 2) and of the urine (table 3) indicates when the values are normal, the agents to be administered and the dosage.

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CALCIUM METABOLISM AND TEETH

Isaac Schour, Chicago (Journal A. M. A., March 19, 1938), points out that it is important to distinguish between the adult tooth, which is essentially completed in formation and calcification and is fully erupted, and the tooth that is still in a growing and formative stage. The biologic reaction of the tooth naturally varies with the different periods of its life span. Present evidence establishes the fact that the adult and fully erupted tooth is as a whole not subject to modification in structure or calcification by changes in calcium metabolism. The calcium content of dentin may be slightly increased with age by secondary calcification. However, unlike bone, enamel and dentin are not storehouses of calcium and are not subject to withdrawal. Present evidence has not established a correlation between calcium metabolism and caries and offers no factual basis for the view that the incidence of caries is increased because of the metabolic changes that occur during pregnancy. Clinical and statistical evidence shows a similar incidence of caries in pregnant women and in nonpregnant women of corresponding age. The indications are that the response of the growing and calcifying tooth to changes in calcium metabolism induced by endocrine factors and vitamin and other dietary factors is characteristic and to some extent pathognomonic because the calcifying dental tissues are uniquely specialized and sensitive structures. Most of the evidence on the delicate, accurate and prompt response of the calcifying tooth to calcium disturbances is derived from data obtained from animal experimentation, especially on the incisor of the rat, which is a tooth of continuous growth. Nevertheless, recent results of studies on human beings indicate that human teeth are also very sensitive and possess similar kymographic qualities.



## CURED DIABETES?

B. Y. GLASSBERG, M.D.

ST. LOUIS

A search of the literature for the last ten years affords scant reason for believing that a cure is at all common in diabetes. True, there have been cases of thyrotoxicosis associated with diabetes in which the diabetes seemed entirely dependent on the goiter.<sup>1,2</sup> There have been a few cases in which the diabetes disappeared with the development of cirrhosis of the liver.<sup>3</sup> Some physicians<sup>4</sup> have commented on the improvement occurring in diabetics with infected gallbladders associated with a chronic interstitial pancreatitis, after proper dieting and surgical treatment of the diseased gallbladder. I except in this discussion those cases of diabetes treated surgically by operations on the parotid gland, on the adrenals, on the pancreas itself or by irradiation of the pituitary gland; in such cases the most that has been claimed is that the severity of the diabetes was lessened. There have been reports<sup>5</sup> of patients thought diabetic who did well on an approximately normal diet but in the few instances of the sort that I have found the data are unconvincing. In most of the case reports appearing in the literature as well as in those which I present, the glucose tolerance test has been used as the chief diagnostic criterion, although I am well aware of the objections that have been raised against it. Among these objections are the nature of the diet used for several days preceding the administration of the glucose, the existence of a state of relative acidosis or alkalosis<sup>6</sup> in the body, the existence of infection<sup>7</sup> and a delay in the emptying time of the stomach.<sup>8</sup> Of these the last is the most pertinent yet there is no clear cut evidence to show that a delayed emptying time of the stomach is found in any appreciable percentage of persons presenting a diabetic type of tolerance curve. Certainly such a delay in emptying time is hardly to be anticipated in the absence of all clinical symptoms.

That a cure in diabetes is possible is to be inferred from the remarkable case<sup>9</sup> in which new islet formation, not hypertrophy of preexisting islet tissue, was found in a 9 year old boy who was killed in an accident after having had adequate anti-diabetic therapy for a year. The existence of new islet tissue was confirmed in this case by such eminent authorities as R. R. Bensley, F. M. Allen and Eugene Opie. Nevertheless Wilder in his annual review of diseases of metabolism in the *Archives of Internal Medicine* makes no mention of a case of "cured" diabetes during the last three years.

Every clinician is aware of the marked spontaneous variations in the severity of diabetes which lead some to believe that it is a disease having periods of remission and exacerbation dependent on still unknown factors. Yet it is rare to find in

the literature reports of improvement<sup>9</sup> such as those recorded in the Naunyn or preinsulin era. Bowen<sup>11</sup> treated a 21 year old Negro who developed acute diabetes with coma and blood sugar of 1320 milligrams per cent shortly after a sulfur injection for the cure of acute arthritis. Eighteen months later a normal glucose tolerance curve was obtained although the patient had been on an unlimited diet in the interim. Three months after the normal test was obtained this patient died in diabetic coma.

We come finally to a consideration of the only four cases I have been able to find in the literature in which diabetes seemingly was cured but in no one of them is there a prolonged period of observation. John<sup>12</sup> saw a 55 year old acromegalic male with classical diabetic history of three months' duration. He required about a hundred units of insulin daily for the maintenance of a normal blood sugar level. Later, for a period of three months, the patient lived on a diet of his own choosing without insulin; at that time a nondiabetic glucose tolerance curve was obtained. In John's second case, a 37 year old female with acute diabetes, treated only by starvation and dietary restriction, a normal glucose tolerance curve was obtained six weeks after onset. Unfortunately there is no information as to the further course of these two patients.

Holcomb<sup>13</sup> saw a markedly obese 44 year old male with all the symptoms of acute diabetes; ten months later and after his weight was reduced to normal he had a nondiabetic glucose tolerance curve. A 32 year old male was 30 pounds overweight at the onset of acute diabetes; ten months later (the weight is not stated) he had a nondiabetic glucose tolerance curve. Inasmuch as these patients were not observed further we can form no opinion as to the permanence of cure.

Joslin<sup>14</sup> is skeptical of the possibilities of cure in diabetes. He proposes the following criteria of cure: (1) A diagnosis of diabetes based upon a glycosuria of at least 0.5 per cent accompanied by a fasting blood sugar of at least 140 milligrams per cent or a blood sugar after a meal of at least 170 milligrams per cent; (2) definite information as to the duration of diabetes; (3) a normal glucose tolerance curve, and finally, (4) that a proved case of diabetes conform to all the criteria of cure over a period of five years.

### METHOD

In our clinic the diagnosis of diabetes is based upon a history looking especially for the classical symptoms of increased appetite, increased thirst, increased urination, nocturnal urination, loss of weight and pruritus. An elevated blood sugar, either fasting or after a meal, and usually a glucose tolerance test complete the diagnosis. I consider the blood sugar three hours after the ingestion of 100 grams of glucose the most important single criterion of diagnosis. If it is above 150 milligrams per cent the patient is unhesitatingly called dia-

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betic. If the three hour value is below 100 milligrams per cent the patient is almost always called nondiabetic but there are occasional exceptions to this rule. If the three hour blood sugar level is between 100 and 150 milligrams per cent it is often difficult to reach a diagnosis; in many of these cases the curve is repeated at a later date and this is more likely to be the case if the blood sugar, fasting and after a meal, is within normal limits.

Obese patients are placed upon a reducing régime; other diabetics are placed upon a diet modeled after that recommended by Joslin. At each clinic visit a urinalysis is made and blood sugar estimations are made at intervals of three or four months. If the blood sugars are consistently within normal limits and the patient is not taking insulin the glucose tolerance curve is repeated.

The histories of two patients who might be considered cured but in whom the original diagnosis is open to some doubt although the evidence strongly points to diabetes will illustrate some of the difficulties that interfere with a diagnosis in the first place and of a cure in the second. They will serve as evidence of my timidity in pronouncing a person once diabetic as no longer so. Yet, in view of the variety of claims that are made for a variety of therapeutic procedures designed to control diabetes it seems worth while to present these patients who have at least shown marked improvement, even cure, if the original diagnosis of diabetes is tenable.

#### CASE REPORTS

Case 1. A male, aged 55 years, entered the hospital in August, 1935, on account of an extensive cellulitis of the upper lip with glycosuria of 1 per cent and a blood sugar of 250. He was afebrile throughout his entire stay in the hospital and the cellulitis cleared rapidly under appropriate local treatment and with dietary restriction. The fasting blood sugar on the second and third days of hospitalization was 139 and 135, respectively. A glucose tolerance curve done when the lesion was practically healed revealed a curve typical of diabetes. The patient had lost 20 pounds in weight in the preceding three years, was still much overweight (normal, 139 pounds) and complained of increased urination; a sister has diabetes. After his discharge from the hospital an additional 22 pounds of corpulence was removed and a year after the first test a nondiabetic type of tolerance curve was obtained; a year later this was still nondiabetic in form. His tolerance curves are shown in table 1.

Table 1. Glucose Tolerance Tests

Date	Fasting	1 hr.	2 hr.	3 hr.	4 hr.	Weight
Aug. 14, 1935	116	250	269	191		166
Aug. 17, 1936	92	197	101	141	68	146
Aug. 27, 1937	100	211	195	106	97	150

Case 2. A woman, aged 57, first seen in April, 1936, on account of glycosuria appearing during convalescence from bronchopneumonia. After she had been practically afebrile for ten days and completely so for five days a glucose tolerance curve was typical of diabetes. The patient had lost 40 pounds in weight (normal, 130 pounds) in the preceding eight years and the fasting blood sugar was recorded as 142 in 1934 although there were no symptoms of diabetes. Because of the proximity of infection no treatment was prescribed and the

curve was repeated six weeks later. The second curve was typically nondiabetic in type as was a third curve done a year later although the form of the latter is a bit unusual. Her tolerance curves are shown in table 2.

Table 2. Glucose Tolerance Tests

Date	Fasting	1 hr.	2 hr.	3 hr.	4 hr.	Weight
April 2, 1936	99	235	241	171	97	110
May 15, 1936	83	119	128	85	57	113
June 4, 1937	118	149	142	93	93	116

I am not sure that either of these patients can be indubitably pronounced to have been diabetic although, if they were, then they must be considered as "cured." The next case history is presented to illustrate the lability of the glucose tolerance curve performed over a period of years and to illustrate the difficulty of interpretation which these curves sometimes offer.

Case 3. A male, aged 61, first seen in August, 1931, with a history typical of diabetes including a loss of 13 pounds in weight (normal, 153 pounds) in the preceding year. The fasting blood sugar was 148 but the glucose tolerance curve was hardly typical of diabetes. Nevertheless a reducing diet with small amounts of thyroid was prescribed. He disappeared from sight for nearly two years and then a curve typical of diabetes was obtained. Twenty-nine pounds of corpulence was removed; occasional blood sugars were normal or nearly so. A curve approaching the nondiabetic in type was obtained a little over two years later. The next curve, obtained five and a half months later, presumably showed a decrease in tolerance; it is of the type offering so much difficulty of interpretation when it is obtained in the absence of other information. At this time the patient underwent many economic hardships and insisted upon his inability to follow the reducing regime. He ate large amounts of starchy foods and little fat; he succeeded in gaining 13 pounds and a curve typical of diabetes was obtained eight months later. His tolerance curves are shown in table 3.

Table 3. Glucose Tolerance Tests

Date	Fasting	1 hr.	2 hr.	3 hr.	4 hr.	Weight
Aug. 15, 1931	120	172	156	142	127	224
Dec. 16, 1933	136	273	303	224		231
Feb. 14, 1936	98	157	195	138	90	202
July 31, 1936	102	181	212	139	93	200
April 19, 1937	119	228	285	245	148	213

With these reservations as to the difficulties to be faced in the interpretation of the tolerance test I present the history of five patients in whom a diagnosis of cured diabetes seems tenable.

Case 4. A male, aged 66, first seen in December, 1930, because sugar had been found in his urine; a glucose tolerance curve typical of diabetes was obtained. Thirty-eight pounds of body fat were removed and a nondiabetic type of glucose tolerance curve was obtained. He has continued to show a nondiabetic type of curve over a period of four years although he has regained some of the weight (normal, 168 pounds) once lost. His tolerance curves are shown in table 4.

Table 4. Glucose Tolerance Tests

Date	Fasting	1 hr.	2 hr.	3 hr.	4 hr.	Weight
Dec. 15, 1930	115	194		181		194
June 29, 1933	87	127	143	109	89	156
May 15, 1934	80	128	100	75		158
Dec. 14, 1934	85	163	154	114		170
Nov. 30, 1935	88	141	73	55	67	170
June 13, 1936	87	163	116	92	50	170
April 17, 1937	94	120	79	50	67	174



Case 5. A male, aged 52, first seen in April, 1936, with the history of a loss of 10 pounds in weight in the last two years, paresthesia of the finger tips and increased thirst for the preceding two months. Glycosuria, amounting to 3 per cent in some specimens was found and the blood sugar after a meal was 195; two days later it was 167. He was reduced 18 pounds (normal, 138 pounds) in the next two months and a quite normal glucose tolerance curve obtained. During the last year he has been allowed a diet of his own choosing with the single injunction that he gain no weight. The tolerance curves, nondiabetic in type, are shown in table 5.

Table 5. *Glucose Tolerance Tests*

Date	Fasting	1 hr.	2 hr.	3 hr.	4 hr.	Weight
July 31, 1936	95	116	127	141	94	136
Feb. 20, 1937	93	178	156	92	45	136
Aug. 20, 1937	84	168	158	97	88	140

Case 6. A female, aged 51, first seen in December, 1934, because of an elevated fasting blood sugar. She had none of the classical symptoms of the disease but the glucose tolerance curve was diabetic in type. She was reduced 34 pounds in weight (normal, 127 pounds) and four months later a curve which is not definitely classifiable was obtained. During the subsequent two and a half years three tolerance curves have been obtained which are definitely not diabetic in type. Her curves are shown in table 6.

Table 6. *Glucose Tolerance Tests*

Date	Fasting	1 hr.	2 hr.	3 hr.	4 hr.	Weight
Dec. 15, 1934	121	265	197	141		172
Mar. 11, 1935	91	211	225	137	62	138
Jan. 10, 1936	95	197	140	88	56	142
Aug. 14, 1936	97	185	176	130	124	139
Aug. 13, 1937	88	162	119	121	63	137

Case 7. A female, aged 57, first seen in July, 1934, with a history of increased thirst, increased urination and nocturnal urination for several weeks and a weight loss of 10 pounds in the preceding six months. A sister has diabetes. A glucose tolerance curve typical of diabetes was obtained. While hospitalized at this time for a rectal operation she required 20 units of insulin daily to maintain the blood sugar normal. After discharge from the hospital a reducing régime without insulin brought about a weight loss of 24 pounds (normal, 120 pounds). Eight months later a nondiabetic curve was obtained and at intervals since the curve has been nondiabetic in type although the patient has gained weight almost to the original level despite repeated admonition and instruction. Her curves are shown in table 7.

Table 7. *Glucose Tolerance Tests*

Date	Fasting	1 hr.	2 hr.	3 hr.	4 hr.	Weight
July 14, 1934	128	280	286	250		142
Mar. 7, 1935	82	197	101	150		118
Aug. 30, 1935	89	120	107	98	47	122
Feb. 29, 1936	99	198	147	138	63	131
Aug. 14, 1936	103	228	186	137	112	134
Feb. 2, 1937	99	195	149	122	63	138

Case 8. A female, aged 48, first seen in September, 1934, with a history of a loss in weight of 17 pounds in the preceding three years, of increased appetite and increased urination and pruritus for the preceding nine months. There had been no preceding infection and the menopause occurred three years before. A glucose tolerance curve typical of diabetes was obtained. She was reduced 20 pounds (normal, 128 pounds), was continuously aglycosuric with blood sugars after meals varying between 94 and 125. Nevertheless, a year later the curve was still typical of diabetes. The reduced

weight was maintained and about six months later a nondiabetic curve was obtained. Two further curves, a year apart, showed a nondiabetic type of response to glucose. In October, 1936, this patient required hospitalization on account of a pelvic cellulitis but there was no evidence of diabetes. Her curves are shown in table 8.

Table 8. *Glucose Tolerance Tests*

Date	Fasting	1 hr.	2 hr.	3 hr.	4 hr.	Weight
Sept. 7, 1934	253	430	456	428		138
Oct. 5, 1935	97	237	208	145	82	118
Mar. 20, 1936	114	222	159	118	107	118
Aug. 7, 1936	117	224	169	132	124	112
Aug. 25, 1937	102	194	160	91	99	116

## DISCUSSION

My purpose in presenting these case reports is to illustrate the possibility of cure in diabetes. According to usually accepted diagnostic standards all these patients can be said to have had diabetes. Clinically these were mild cases, only one of them requiring insulin at any time and that one requiring it only during a period when operation was necessary. With the exception of case 5 all the patients were considerably overweight at the time they first presented themselves for treatment. It would seem that weight reduction was of the utmost importance in initiating an improvement so marked in these patients that they may be classified as cured. Yet, in case 7 weight has been regained almost to the initial level without the re-appearance of a diabetic type of tolerance curve. That a reduction in weight is not always accompanied by the appearance of nondiabetic glucose tolerance curves is amply illustrated by the fact that other patients who have been reduced continue to give a diabetic type of response to the administration of glucose.

Although these patients were receiving small amounts of fat in the diet, they were nevertheless metabolizing large amounts of fat as indicated by the weight reduction. It seems difficult to reconcile the views of those who believe that the metabolism of fat<sup>15</sup> is injurious to the diabetic organism with these observations. It would seem that the reduction of the total metabolic load of the body, rather than the particular therapeutic régime followed, was responsible for the striking increase in tolerance shown by our patients.

When our patients have reached the stage at which they show a nondiabetic type of glucose tolerance curve they are allowed to eat an unrestricted diet so long as they do not gain weight. They are kept under frequent observation in order that the return of glycosuria or increased blood sugar levels may be promptly noted. Thus far we have seen an occasional diabetic in whom a glucose tolerance curve approaching the normal was obtained on a single test but in whom subsequent tests reverted to the diabetic type.

## SUMMARY

1. The histories of five patients in whom a diagnosis of cured diabetes is possible have been pre-

sented. In addition the histories of two patients in whom the original diagnosis of diabetes seems open to some question but who now show nondiabetic types of glucose tolerance curves have been presented.

2. Regardless of the ultimate interpretation that may be placed upon these case histories they do reemphasize the tremendous importance of weight reduction and the acquisition of a normal or below normal weight as means to the improvement of the tolerance of the diabetic patient. These experiences as well as others would suggest that many potential diabetics can either avoid the disease entirely or mitigate its severity by attaining and maintaining a normal weight.

3. We have seen no harm accrue to the patient nor have we seen a recurrence of the diabetic syndrome in those patients once diabetic who have shown repeatedly a nondiabetic type of glucose tolerance curve and who were allowed to ingest an unlimited diet of their own choosing, provided only that they did not gain weight.

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By economy in medication Bernard Fantus, Chicago (*Journal A. M. A.*, March 19, 1938), does not mean the use of inferior remedies, for the first principle of economy in prescribing is that the most efficient remedy is likely to be the cheapest. The second principle in the economy of medication should be: Among drugs of equal efficiency, choose the least expensive.

## INDUSTRIAL TUBERCULOSIS

### A PUBLIC HEALTH FACTOR

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ST. LOUIS

The term "industrial tuberculosis" is somewhat misleading since it may convey to the minds of some people the thought that industry as such is the direct causative factor in the production of tuberculosis. I wish, therefore, from the start to clarify this point by stating that tuberculosis is a germ disease and it is this germ, known as the tubercle bacillus, which is the direct cause of the disease, tuberculosis; no industry, no matter how harmful it may be to the human body in general, is capable of directly producing the disease, tuberculosis, without the presence of tubercle bacilli.

Assuming that the latter statement is true, how can we explain the high mortality rate from tuberculosis in certain industries? This fact has been confirmed by the statistical studies of Dublin and Vane<sup>1</sup> of the Metropolitan Life Insurance Company and more recently by Whitney<sup>2</sup> of the National Tuberculosis Association.

In seeking an answer to this question, one must consider the subject of so-called industrial tuberculosis not only from the broader aspect but also from the limited viewpoint of possible existing predisposing factors incidental to certain industries.

The contributory factors which in certain industries may play a role in the development of tuberculosis are many in number but for the sake of clarity may be classified under two main headings, namely, environmental and socio-economic.

#### ENVIRONMENTAL FACTORS

Industrial environment has long been recognized as a most important contributory factor in the causation of upper respiratory disease. For instance, it has long been known that employees in dusty trades and those usually exposed to noxious fumes, high temperatures, excessive moisture and bad weather conditions generally, are among the workers who frequently are forced to absent themselves from their employment because of sickness.

*Inorganic Dusts.*—One of the most serious environmental factors existing, especially in the mining and in some abrasive industries, is the presence in the atmosphere in concentrated form of inorganic dusts containing abnormal amounts of pure silica. Industries like hard rock mining, quarrying, grinding and sand blasting have a high morbidity and mortality rate from tuberculosis since these industries afford an atmosphere containing a concentrated dust with an abnormal amount of free silica. Employees exposed to such an atmosphere over a prolonged period of time will develop silicosis and

From the St. Louis Health Division.

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the latter will lead to the development of tuberculosis in many instances.

Asbestosis is caused by another dusty industry which may perhaps contribute to the morbidity of tuberculosis. However, the evidence at the present time in this direction is not convincing.

*Organic Dusts.*—There has been considerable discussion as to role of organic dust in the production of tuberculosis. The high mortality rate from tuberculosis in tobacco workers, shoe workers and tailors was responsible for the early belief that organic dust was a contributory factor in the production of tuberculosis. The work of Landis<sup>2</sup> of Philadelphia which is based on autopsy studies of the lungs of fifty patients who had been exposed for many years to organic dusts disproved this concept since none of these patients showed evidence in their lungs of active tuberculosis. At the present time it is generally held that organic dusts do not produce disabling disease of the lungs and are not predisposing factors in the development of tuberculosis.

*Noxious Fumes.*—The effect of noxious fumes on the body and their relation to tuberculosis has been studied experimentally by Winternitz,<sup>4</sup> Henderson and Haggard,<sup>5</sup> and clinically by Metz and Gilchrist<sup>6</sup> and Berghoff.<sup>7</sup> The findings of these investigators seem to indicate that noxious fumes in great concentration will produce immediate irritative reactions in the upper respiratory tract leading to such serious complications of the lungs as edema, pneumonia and in some cases death of the patient. Prolonged post-war observations made by Metz on soldiers who were gassed during the World War would seem to indicate further that noxious fumes, when inhaled into the lungs, do not lead to the development of either acute or chronic pulmonary tuberculosis in most instances.

*Miscellaneous Factors.*—Other environmental factors which may affect the health of the workers are changeable temperatures, improper ventilation and unsanitary conditions in general; all these may at times be contributing factors in the development of tuberculosis as well as other respiratory diseases.

From the above discussion it becomes reasonably clear that certain industrial environments tend to favor the development of certain diseases including tuberculosis.

#### SOCIO-ECONOMIC FACTORS

It is an accepted fact that tuberculosis being an infectious disease is capable of producing and actually does produce active tuberculosis in people regardless of their social and economic rank. It is also true that poverty goes hand in hand with tuberculosis and that most tuberculosis will be found in people of the under-privileged classes of society.

These facts have recently been confirmed statistically by Miss Whitney who in a study of death rates by occupation revealed that the unskilled worker, the one who usually works long hours and most often in an unventilated and unsanitary en-

vironment, the one who usually receives meager compensation for his services has a very high mortality rate from tuberculosis. On the other hand, the policeman who receives a fair salary and who is usually out of doors with little physical exertion has a comparatively low death rate; while the lawyers, the judges, the bankers and the manufacturers, representatives of the higher economic bracket of society, have the lowest death rates as seen in table 1:

Table 1. *Death Rates From Tuberculosis Per 100,000 Gainfully Occupied Males 15 to 64 Years of Age in Selected States According to Economic Groups (1930).*

Tuberculosis (Respiratory Form)	
Average for all occupations	87.4
Average for professional group	28.3
Average for lawyers and judges	21.2
Physicians and surgeons	29.4
Average for proprietors, managers and officials	44.8
Bankers, brokers and moneylenders	22.5
Managers and officials	27.9
Builders and building contractors	33.1
Average for clerks and kindred workers	62.4
Real Estate agents	28.8
Average for agricultural workers	46.7
Average for skilled workers and foremen	74.2
Moulders, foundrymen and casters	155.5
Policemen	46.
Average for unskilled workers	183.1
Factory and building construction laborers	221.7
Average for servant classes	175.1
Servants and cooks	156.
Waiters	169.8

Of great public health interest is the fact that the servant, the cook and the waiter, representatives of the lower economic rank, have unusually high mortality rates. Since these people represent frequent sources of infection to the community, the control of tuberculosis in this economic group becomes a major public health problem.

Miss Whitney's study was based on mortality statistics and of males only. Some insight into the morbidity according to occupation can be gotten from a recent study that we have made in the St. Louis Health Division<sup>8</sup> on 31,990 reported cases of tuberculosis male and female as seen in table 2:

Table 2. *Occupations of 31,990 Reported Cases of Tuberculosis in the City of St. Louis (1909-1934 inclusive).*

Total number of tuberculosis cases	31,990
Total number of occupations	705
60 per cent of cases in 10 major occupations	
40 per cent of cases in 695 remaining occupations	
1. Housework	7651
2. Waiters and cooks	660
3. Laundresses	480
4. Unskilled labor	5119
5. Clerical work	2311
6. Shoeworkers	883
7. Porters	661
8. Teamsters	639
9. Salesmen	519
10. Students	516
Total	19,439

We found in table 2 that the occupations of 19,439 or 60 per cent could be classified under ten major heads while the remaining 12,551 could be classified under 695 occupations. It is interesting to note that "housework" heads the list of the major ten occupations and together with waiters, cooks and

laundresses total 8791 or 45 per cent of the total in the ten major occupations.

Here should be noted unavoidable inaccuracies. First, the data goes back twenty-six years when we were not solicitous about the details of occupations as we are today; second, the term "housework" misleads for it includes housewives, maids and women who stayed at home most of the time but did not do housework. Despite these discrepancies the chart contains pointed information since "housework" in these instances connotes that during the development of active disease these patients spent most of the time at home, living intimately with their families, eating at the same table and affording opportunities for infection.

It is of interest in this connection to contrast the usual environment of the cook, the waiter, the housemaid and the ordinary environment of the industrial worker. The former group are not exposed to silicious dusts or fumes but in most instances to food, the builder of body and maintainer of life. It seems illogical to state that food as such predisposes to tuberculosis despite the high incidence rate and death rate from this disease in these people.

It becomes evident that we must look for other causes to explain the high rate. What are the responsible factors?

A definite answer to this question cannot be given. One can only speculate in attempting to find an answer. Is the high death rate due to the long hours of work? To the physical strain? To the mode of life that these people lead? To the fact that opportunities for infection because of intimate contact are greater in this occupation? Or to the possibility that these people may represent the physically inferior group, those who are drawn to this type of selected employment subconsciously, first, because they are educationally unprepared to be employed in other occupations; second, because of the availability of this form of employment, and, third, because of the apparent misconception that household activities are not a drain on one's vitality.

I wish to summarize the thoughts expressed in this paper by again emphasizing that there is no evidence that industry directly causes tuberculosis; however, there is an abundance of evidence that some industries indirectly shorten the life of the industrial worker and that some occupations in industry definitely predispose to the development of tuberculosis. Of all occupations, the ones that permit the inhalation of dust containing an abnormal percentage of free silica contribute to the development of tuberculosis the greatest.

Finally, I wish to point out two possible remedial measures for the control of tuberculosis in industry:

(1) Removing or controlling existing environmental factors that are hazardous to the health of the workers such as dusty atmospheres, poor ventilation and faulty sanitation.

(2) Encouraging periodic health examinations of

industrial workers by their family physician for the purpose of detecting active cases of tuberculosis in the early stages so that by isolating them infection to other employees, to the immediate family and to the community in general could be avoided.

It is only through the application of these major remedial measures that the indirect contribution of industry to the morbidity and mortality statistics from tuberculosis will be mitigated, thus assuring a better state of public health.

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## DIAGNOSIS AND TREATMENT OF CHOLELITHIASIS AND EXTRAHEPATIC DUCTILE STONES

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The diagnosis and treatment of stones in the gallbladder and extrahepatic ducts is worthy of great consideration because the condition is extremely common, greatly neglected and many times poorly treated.

I shall not attempt to discuss the diagnosis of these conditions in detail but only mention in a superficial way what I consider the cardinal points used in arriving at the diagnosis of this disease. The clinical picture presented in these cases is extremely varied so a description which would be applicable routinely would be exceedingly difficult.

A careful history of a person suffering from gall stones usually dates back over a period of a few years. In the beginning the symptoms are very mild, usually being confined to a history of a slight amount of indigestion following particularly the eating of certain kinds of food, especially greasy foods. These symptoms may persist for a number of years with little or no apparent change until sooner or later the symptoms become much more pronounced which marks the advent of definite inflammation and infection of the gallbladder. Until there is infection present gall stones produce



few or no symptoms. It has been estimated by some that gall stones produce symptoms in but 10 per cent of the cases but this is probably an underestimate. It merely means that gall stones do not produce symptoms or produce only mild symptoms early and that the real symptoms do not begin until definite infection and inflammation are present or until the passage of a stone into the extrahepatic ducts.

In a more typical case of gall stones a careful history will give a story somewhat as follows: First is a complaint of indigestion rather vague and indefinite for a period of months to possibly years. This so-called indigestion after a certain time quite variable in length becomes more noticeable. The individual complains of fullness in the epigastrium causing eructation of much gas following eating of a meal, especially a meal which contains grease or fat. He complains of feeling hungry but being unable to eat much food at a time because it seems that a very small quantity of food causes him to feel full and uncomfortable. Then he begins to develop a feeling of nausea following eating associated with vague pain or discomfort in the epigastrium and right hypochondriac regions. After a time the pain often radiates to the right subscapular region. Up to now the pain has been mild but of sufficient intensity to be noticeable.

The pain now grows gradually worse but is still dull in character, being of course worse after eating certain kinds of food; it is usually relieved by vomiting. This type of pain is caused according to Moynihan by mild inflammation of the gallbladder with impaction of a stone in the neck of the gallbladder and the process of vomiting causes relaxation of musculature thereby allowing the stones to fall back in the gallbladder thus relieving the symptoms.

Following this type of symptoms and pain we have the development of acute pain which represents merely a higher grade of gallbladder inflammation that extends to the peritoneal covering of the gallbladder. This pain usually is more pronounced in the right hypochondrium but frequently as in the case of the dull pain radiates to the right subscapular region, right shoulder, right side of the neck and down the right arm.

Then there may develop, if the case is allowed to proceed sufficiently long, a condition known as biliary colic. This type of pain is mechanical in origin, resulting from muscular spasm of ducts, cystic, common or hepatic, in an effort to expel a foreign body which is usually a gall stone although sometimes a mucous plug. In a fully developed form biliary colic is characterized by excruciating paroxysmal pain in the epigastrium or right hypochondriac region which radiates to the right subscapular region, shoulder or down the right arm, and sometimes to the right lower abdomen and down the legs. This pain never radiates to groins or external genitalia as it does in cases of renal colic. The attacks often occur at night and last from a few

hours to several days. The attacks are accompanied by nausea, vomiting, sweating and sometimes circulatory collapse and signs of rather high grade shock.

A certain percentage is accompanied by chills and fever which are indicative of a severe attack of acute cholecystitis or infection in common duct and biliary tree. The liver during these attacks is usually enlarged and tender. The gallbladder becomes distended and enlarged but frequently cannot be felt because of muscular rigidity of the abdominal wall.

Attacks after a varying length of time usually subside, many resulting in the gall stone finding its way back into the gallbladder thereby resulting in an unsuccessful attempt on the part of the stone to pass into the ducts. In these attacks there may or may not be jaundice of an appreciable degree. Only about 50 per cent of these cases show evidence of jaundice.

In some of these cases the stones become lodged in the cystic, common or hepatic duct leaving enough room for bile to drain around the stone into the intestinal tract. In other cases the passage is practically occluded which results in a jaundice that does not readily subside, accompanied by other well known symptoms of common duct obstruction such as chills, fever, etc. In this type of case a diagnosis of common duct stone is not difficult.

In some of the cases following biliary colic small stones are recovered from stools which of course leaves no doubt as to the diagnosis. Aside from a thorough history there are physical findings and roentgen ray studies which are of great diagnostic value. Cases with an acute attack of gall stone colic are invariably tender over the region of the gallbladder. Aside from this nothing is constant from the standpoint of physical examination.

Roentgen ray is of the greatest importance in diagnosing biliary stones. In careful, competent hands stones in the gallbladder can be diagnosed by the various roentgen ray methods such as a flat plate of the abdomen and gallbladder visualization tests in approximately 98 per cent of cases.

In addition to this, according to Allen Wilkinson, duodenal drainage by use of magnesium sulphate solution is one of the most reliable diagnostic measures for determining the presence of stones in the extrahepatic ducts, especially in cases with the gallbladder removed. The usual technic as described for duodenal drainage is employed.

In a small percentage of the cases reported by Lahey stones have been found in common and hepatic ducts unaccompanied by stones in the gallbladder. Four per cent of cases presented by Lahey of proved common or hepatic duct stones showed no stones in the gallbladder.

Of course there are many conditions which may resemble gall stones to a greater or lesser degree. I shall merely mention a few of the more common diseases which must be ruled out when cholelith-

iasis is suspected. They are as follow: (1) Peptic ulcer; perforated peptic ulcer; (2) cholecystitis without stones; (3) congenital adhesions around the gallbladder and pylorus; (4) neurosis; (5) tabetic crisis; (6) acute appendicitis; (7) cancer of the gallbladder or head of the pancreas; (8) floating kidney; (9) renal colic; (10) lead poisoning; (11) acute or chronic pancreatitis; (12) angina pectoris; (13) right lobar pneumonia; (14) lesions of the spine and other conditions which I shall not take the time to mention.

A careful history, physical examination, laboratory tests, roentgen ray study and other diagnostic measures which are at one's command will usually enable you to differentiate this condition accurately from any of the diseases just enumerated.

The next question is the treatment of cholelithiasis. Up to the present time there is but one adequate treatment for this condition and that is surgery. Since surgery is the only way to remove gall stones the next all important thing to consider is when shall the individual suffering from gall stones be subjected to a surgical operation.

In the past patients were permitted to have repeated attacks of biliary colic and the only ones operated on were those who were forced to submit to surgery because of some emergency such as complete common duct obstruction and others which I shall not take the time to mention. Consequently the majority of individuals who were subjected to operation were extremely poor surgical risks due to long standing biliary infection which had produced a high grade hepatitis with resulting liver damage and associated kidney damage, the combination being responsible for many deaths following gallbladder surgery; this has been demonstrated very forcibly by Helwig of Kansas City.

It is the opinion of the leading authorities today that persons suffering from symptoms proved to be due to gall stones should be operated upon as early as possible in order to prevent high grade infection of gallbladder and the entire biliary system; this usually happens if allowed to run on over a period of years.

One should wait only long enough to prepare the patient as well as possible for the operation. Sometimes it is necessary to spend several days in preparation, the length of time of course depending upon the condition of the patient and his response to treatment. If he is in the midst of an acute attack it is wise to allow the attack to subside before operation. All gallbladder patients should receive large amounts of fluids and be well supplied with glucose prior to operation. This enables him to withstand the early postoperative effects with less reaction. The surgical treatment of biliary tract disease has changed greatly in the last ten to twenty years.

Cholecystostomy with removal of stones within the gallbladder was as much as the pioneers of modern surgery ever attempted. This procedure gave relief to a large number of individuals but it

was found that an appreciable percentage of these patients had after a period of time a recurrence of symptoms and some of them continued to have the same type of symptoms immediately following operation which in most cases was due to extrahepatic ductile stones being left undisturbed.

As a result of the above observation and of the improvement in surgical technic and of increased knowledge concerning the nature of the disease, the operation of cholecystostomy was gradually supplanted by cholecystectomy.

It was soon found that cholecystectomy gave a much higher percentage of cures and was much more satisfactory in every way except for only a very slight increase in the mortality in the hands of competent surgeons. In large infected thick walled gallbladders with associated high grade cholangitis, hepatitis and pancreatitis, biliary drainage should be established by placing a tube in the slump of the cystic duct. This permits bile to drain to the outside in a satisfactory manner. I feel that this is a more logical procedure than to drain the gallbladder which is infected and will remain a chronic focus of infection and probably result in recurrent cholecystitis and cholelithiasis. Of course where the common duct is explored the biliary drainage is established through a T tube placed in the common duct.

Exploration of the biliary ducts was not resorted to until many years later except in cases where there was deep jaundice at the time of operation, the result being of course that many extrahepatic ductile stones were still left in the duct to give future trouble. Many surgeons were content to leave the ducts unexplored even when a moderate degree of jaundice was present, hoping that the jaundice was due to inflammatory swelling which would subside after cholecystectomy. In some cases this was found to be true but in more cases the jaundice did not clear up because of the presence of a stone in the common duct.

It has been reported by many authorities from clinical experience and examinations at postmortem that 10 to 20 per cent of persons who have stones in the gallbladder also have stones in the common or hepatic duct. So in view of this finding it would seem that unless the ducts are explored 10 to 20 per cent of our patients will not be relieved by operation.

So what symptoms and signs shall be the criteria for exploring the ducts at operation? They may be divided into two main groups: (1) preoperative, and (2) operative.

Group I. The preoperative signs and symptoms are: (1) Jaundice, past or present; (2) continuation or recurrence of symptoms after cholecystectomy; (3) chills and fever after epigastric pain; (4) recurrent attacks of biliary colic; (5) finding of small gall stones in stools.

Group II. Operative signs and symptoms are: (1) Sand and small stones within the gallbladder arouse suspicion; (2) stones which can be felt in



ducts at the time of operation; (3) dilated cystic and contracted gallbladder; (4) enlarged common duct; (5) thickened indurated head of pancreas; (6) when bile withdrawn from duct into a syringe is not golden yellow in color.

If one will use the signs and symptoms mentioned as criteria for opening the ducts I do not believe that many stones will be left. Of course by so doing many ducts will be opened in which no stones are found, but statistics will show that the opening of a duct in which there is no stone does not materially increase the mortality of gallbladder surgery but failing to open a duct which contains a stone and having later to do a secondary operation does very appreciably increase the operative mortality.

As previously intimated the operation of choice for cholelithiasis is cholecystectomy and this is done almost universally except in cases of extremely old people whom you are forced to operate upon and in cases where the condition of the patient and the conditions existing make cholecystostomy a safer and wiser procedure.

Of course the operative skill and surgical judgment of the operator play a large part in the final results in gallbladder surgery as well as in any other kind of surgery.

One of the most important and essential requisites for successful operative work which, I think, especially applies to gallbladder surgery, is good exposure and visualization of the operative field; and to obtain this one must have capable and adequate assistance as well as good relaxation of the patient.

In removing the gallbladder some very capable surgeons a few years ago advocated removal of gallbladder and cystic duct as close to its junction to the common duct as possible, which theoretically was supposed to prevent an enlargement and pouching of the remaining stump of the cystic duct. But most surgeons have ceased to advocate this because it was found that by trying to cut the cystic duct too close to the common duct many common and right hepatic ducts were injured which was the source of much future grief. Now, when the gallbladder has been removed it becomes necessary for one to decide whether or not to explore the common and hepatic ducts. I have already mentioned the indications for this and if the patient presents any of these symptoms or findings I believe the ducts should be opened and probed for stones.

Some men and especially Allen of Boston advocate dilating the papilla of Vater after the method of Bake's to a diameter which is just under that of the duct itself. He advocates this because it allows stones to pass through which have been overlooked or have become lodged in the hepatic ducts. After this the ducts are irrigated with normal salt solution and a T tube is inserted in the common duct and the opening in the duct closed around the tube. The tube is anchored with catgut to the duct wall. Lahey of Boston is not exactly in accord

with Allen on the recommendation of routinely dilating the papilla of Vater because he has had two patients succumb to gas bacillus infection upon whom he had used this procedure, consequently his enthusiasm for it has lost some of its vigor. But Allen who has done this routinely on a large series of cases has never had such an experience following instrumental dilatation of the papilla of Vater.

The development of a hernia depends upon three factors principally; they are, (1) healing quality of the tissues of the patient, (2) presence of infection and (3) type of closure suture used. The incision should be closed in separate layers using plain catgut to close the peritoneum and muscle, chromic catgut to close the fascia and nonabsorbable interrupted tension sutures in all upper abdominal wounds. The tension sutures are valuable and I believe prevent many wounds from opening before good union has taken place.

#### SUMMARY

1. The diagnosis of cholelithiasis and extrahepatic ductile stones is usually not difficult if a careful history is obtained associated with a well done physical examination including exhaustive laboratory tests and roentgen ray study.

2. The operation should be performed as early as diagnosis is made and as soon as the patient is adequately prepared for the operation.

3. The operation of choice is cholecystectomy wherever possible and the patient's condition justifies it.

4. The extrahepatic ducts should be opened and explored in all cases that present any symptoms or signs making one suspicious of the presence of stones in the extrahepatic ducts.

In my opinion all cases of gallbladder surgery should be drained for a few days whether or not the ducts have been opened and explored. It gives the surgeon a feeling of greater security and permits him to sleep better the night following the operation. Some surgeons drain through the incision and others drain through a stab wound to the right of the incision. I think it is probably of little consequence through which place you drain. Those who choose the stab wound to the right of the incision claim that this method lessens the chance of a postoperative hernia but I question if there is any higher percentage of postoperative hernias in cases where drains are inserted in the operative incision.

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## SPECIAL ARTICLE

## A STUDY OF MEDICAL CARE

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The supporters of state managed medicine have for several years continued to attack the motives and the methods of practice of the American medical profession. They have sent scouts scurrying about foreign countries for reports and descriptions of sickness insurance; they have travelled the Volga by boat to look at Russian medicine; they have organized cooperatives to practice medicine for special groups; they have garbled statistics; they have sought by the use of almost every known medium to create the belief in the minds of the American people that the medical profession in the United States is obstructing the distribution of medical services to the groups of people who have low incomes.

Organizers have sought the attention of groups of people in industry, business, commerce, agriculture, fraternal orders, educational institutions and employees in public service in an effort to inflame them against the kind of medical service that is provided by the private practicing physician. In this agitation for a change in medical practice there have been many elements of the social revolution. The scattered "brain-trusters" who would plan new methods of medical practice have constantly refused to recognize the steadfast purpose and the continued forward advance that have characterized medicine since the earliest times. This steadfastness of purpose and unswerving effort to benefit humanity have characterized the American medical profession from the very date of its organization in 1847. The early volumes of transactions of the American Medical Association contain hundreds of references to discussions, reports, recommendations and the realization of progress on such subjects as epidemics, vital statistics, the organization of state boards of health, medical education and licensure, the regulation of the quality of drugs, information concerning nostrums and quackery, and many other subjects which are ultimately of vital concern to the public in the quality and efficiency of medical services.

The latest step in the last decade of a century long program of genuine concern over the quality and distribution of medical services to the people of the United States is to be found in the resolutions recently adopted by the Board of Trustees of the American Medical Association designed to

assist and encourage state and county medical societies to collect information concerning medical needs, and to formulate preferable procedures to supply these needs in accordance with established policies and local conditions.

*Whereas*, A varying number of people may at times be insufficiently supplied with needed medical service for the maintenance of health and the prevention of disease; and

*Whereas*, The means of supplying medical service differ in various communities; be it

RESOLVED, That the American Medical Association stimulate the state and county medical societies to assume leadership, securing cooperation of state and local health agencies, hospital authorities, and dental, nursing and correlated professions, welfare agencies and community chests in determining for each county in the United States the prevailing need for medical and preventive medical service where such may be insufficient or unavailable; and that such state and county medical societies develop for each county the preferable procedure for supplying these several needs, utilizing to the fullest extent medical and health agencies now available, in accordance with the established policies of the American Medical Association, be it further

RESOLVED, That the Board of Trustees of the American Medical Association establish a committee to cooperate with the Bureau of Medical Economics in outlining the necessary procedures for making further studies and reports of the prevailing need for medical and preventive medical services; and that the secretary of the American Medical Association arrange to develop such activities through the secretaries of state and county medical societies in each instance, urging the formation of special committees in each county and state where committees are not available for this purpose.

The Outline for Proposed Plan of Study of Medical Care which has already been distributed to the secretaries of state medical societies contains suggestions intended to be helpful to state and county medical societies in organizing their own methods and procedures contemplated in the resolutions. This outline presents the objectives, procedures, scope of study, organization of demand and supply, and general considerations concerning methods, reports of findings and recommendations. State and county medical societies will also be furnished with suggestions on the conduct of the study and with blank forms which are to be used as models in the construction of their own study forms and reports.

It would be foolish to assume or assert that every person in the United States who needs it is receiving appropriate medical attention. Moreover, it is impossible to state in absolute figures or percentages the number of persons who are not receiving needed medical attention. Whatever the percentage or absolute number may be, the medical and preventive medical care of sick people should be for the most part a local responsibility. The proposed study of medical care is to be an effort on the part of state and county medical societies to evaluate the medical needs in their respective jurisdictions, and to recommend preferable procedures to meet these needs. In short, this study is

This address was presented by Dr. Leland at the Northwest Regional Conference in Chicago, February 13, 1938, and is published that members may have the opportunity of reading this clear explanation of the work being done. A plan for conducting this study in Missouri is now under consideration by the special committee appointed at the Cape Girardeau Session and will be presented to the Council at its meeting preceding the Annual Session. The article is reprinted through the courtesy of the *Journal of the Indiana State Medical Association*.



to be a medical service inventory or a balance sheet of the demand and the supply of medical services in each county.

It is not contemplated that county medical societies should make a house-to-house canvass for the purpose of enumerating the prevalence of all types of disease at a particular time, although the extent of the study and the methods to be used are to be left largely to the judgment of each county medical society with such assistance as they may request from their state medical society headquarters. It is urged that information as to medical needs be sought from every official and voluntary agency or organization or their representatives that have any interest in the provision for medical care for the indigent or low-income groups.

It will be insufficient to inquire simply as to the need for medical services, a careful search must be made to determine whether the people who need medical care desire such care, and whether they have knowledge of the proper individual or place to which to apply for such services. It is recognized that the extent and manner of conducting the study will vary according to the size, geographical location, nature of the population, and many other characteristics of the several counties throughout the United States.

When the information concerning the number and nature of the deficiencies in medical services has been collected, the second step in the study will be to examine carefully these deficiencies and to make recommendations concerning the preferable procedures to correct the deficiencies. A final step which necessarily must follow the study and recommendations is the responsibility which must be assumed by county medical societies to carry out those preferable procedures which are intended to correct the deficiencies found. It is this final step which involves the determination of county medical societies actually to carry out these procedures that will be of the greatest concern to the public.

The medical profession must not consider this project as a defensive counter attack against an offensive advance by the enemies of the medical profession. This movement is but the continued advance of medical organizations against a common enemy—disease. The forward march of medicine is along several sectors: Medical research, medical education, health education of the public, legislation, the examination and evaluation of drugs and appliances, and now a better organization and more equitable distribution of medical services and facilities especially to the indigent and low-income groups.

Medicine has always been its own most severe critic. The outcome of this present self-examination will depend on the enthusiasm, the thoroughness, the friendliness, the absence of prejudice and preconceptions, the scientific spirit, and the recognition of the importance of this project that can be brought to bear by every medical society on the problem of the distribution of medical service.

The outcome will be of the greatest importance to the medical profession as well as the public. Let it never be charged that the medical profession considered its own interests first. On the contrary, the reward which the American medical profession seeks is to extend the benefits of medical care to all who need them, to effect a further reduction of morbidity and mortality, to remove obstacles which may now exist between patients and the medical care they need, in short, as a result of this study it is hoped that good medical care may be made available to everyone through the free and independent institution of American medicine.

#### DOES DIGITALIS INFLUENCE THE COURSE OF CARDIAC PAIN? STUDY OF 120 SELECTED CASES OF ANGINA PECTORIS

In order to determine whether digitalis exerts any influence on the course of pain in patients with angina pectoris Harry Gold, Harold Otto, Nathaniel T. Kwit and Harry Satchwell, New York (*Journal A. M. A.*, March 19, 1938), selected 120 ambulant patients in attendance at the cardiac clinic, for whom the diagnosis of arteriosclerotic heart disease with cardiac pain was made. The study was conducted during a period of seven years. The duration of observations in any given case varied from two to sixty-four months, the average being twenty-one months. The data on changes in pain during the first period of treatment with a placebo were compared with those during a period in which digitalis was used. This period represented from one to several weeks in the case of each. A change took place in 45 per cent of the patients; 30 per cent reported diminished pain and 15 per cent increased pain during the use of digitalis. However, during the first period of treatment with an inert tablet of lactose, 28.3 per cent of the patients reported a departure from their habitual status; 15 per cent reported increased pain and 13.3 per cent decreased pain. Whether digitalis by its specific systemic action is responsible for the changes in pain can be learned only from a study of the complete charts of the individual cases, showing the changes of pain during periods of various control agents alternated with periods of digitalis. In these charts the intensity of the pain as compared with the habitual status was graded, and three grades in each direction were considered: increase or decrease of pain, slight, moderate or marked. The charts of the 120 cases fell into four types: (1) those in which the habitual status remained constant and apparently uninfluenced by any drug that was used (10 per cent), (2) those in which temporary departures from the habitual status were always in the direction of increased pain (3.3 per cent), (3) those in which temporary departures were always in the direction of improvement (20 per cent) and (4) those in which the condition fluctuated markedly in both directions (61.7 per cent). A careful examination of the illustrative charts of cases 1 to 16 shows that an increase or decrease of pain, as the case may be, occurring during the use of digitalis, was reproduced in every instance by a placebo or another control agent. The lack of causal relationship between the specific action of the digitalis and the change in pain is directly disclosed in the majority of cases by the disappearance of the change even when, as in some cases, administration of the drug was continued or, as in others, after an interruption a course of digitalis medication was repeated. Where use of the drug in tablet form was attended by increased pain during more than one course, the change vanished when the tincture in equivalent doses was substituted.

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APRIL, 1938

## EDITORIALS

### THE MEDICAL PROFESSION AND THE CONSERVATION OF MENTAL HEALTH

Many medical journals carry editorials concerning the doctor and his problems. Sometimes, perhaps, some of us wonder if it is not "much ado about nothing." After all, the duty and obligations of the doctors can be put simply. "To cure the sick" just about tells the story. All the debates about state medicine must be settled according to this formula. And they will be. Doctors need not fear the outcome.

Governments are still controlled by the people, and what the people want, they get. And what they want in this case is health. In spite of the ballyhoo and the feature stories, the great mass of people look to the ethical physician and his co-workers for advice in regard to individual health matters and for leadership in community health matters. But the doctor must encompass new developments in medicine if he is to retain that leadership. The only reason he has held it to date is because tradition makes him worthy of it. He knows more than his patient and more than the politicians. He must continue to know more about everything pertaining to health; otherwise his patients who know something that he does not will turn to those who assume knowledge. Remember, people get what they want. Doctors may think that they know what the people need, but the people know what they want. If the doctors do not supply some one else will.

A glance at the lay periodicals and the feature stories in the daily press should afford a clue to one of the major health interests of the public today. It is the mind—psychology, psychiatry; everything and anything dealing with the mental activities of individuals and groups, and the abnormalities of this physiological mechanism.

The mind is the reactive mechanism of the body. It is not mysterious; it is not a separate entity; it is part of the body and a part of the mechanics of the living organism. The practicing physician should know more about the mind than anyone else. But he does not. He professes to be at a loss

in these matters. He denies knowledge of the mind. He states that psychiatry and psychology are as a closed book. He is negativistic and defeatist in attitude when he approaches a problem in which mental reactions are involved. As a result of this attitude people are turning to psychologists and social workers for advice in these fields.

Many doctors may think that this, again, is much ado about nothing. Let the people go to these outsiders. "I will continue to practice medicine. I will continue to treat colitis and constipation, headache and backache, insomnia and anorexia, etc." But will he? We think not. Not unless he realizes that these conditions and many others have a definite psychiatric background and that unless the environment of the patient and his reactions are studied these conditions cannot be corrected. The layman is beginning to realize this. If the doctor gives a pill or a potion and tells his patient to come back next Tuesday he need not be surprised if he never sees the patient or his family again. He has gone to another doctor who does know; or, what is more tragic, he has gone to a practicing psychologist who will interpret this particular condition correctly and will then become the medical adviser of the family.

All sickness is not of the mind. Pills and potions have their place. Times have changed, however; frequently the layman knows when he needs advice and when he needs a pill. He expects the doctor to know, too.

It has been conservatively estimated by Osler and other great clinicians that three fourths of the average doctor's practice consists of the so-called functional syndromes. Almost without exception these conditions lend themselves to environmental readjustment more readily than they respond to a pharmacopeal approach.

It may be difficult for the physician who thinks exclusively in terms of pathology and anatomy to accept these statements. We hope he will remember that life is the whole physiology in action and that sickness is abnormal physiology. So considered the mind and its abnormalities are a physiologic mechanism of the body. Its disturbances influence the entire functioning of the organism. Diseases of the mind may manifest themselves by pains and aches, dysfunctions and malfunctions of bodily structures; in fact, any symptom may be shown, occasionally even death itself may follow psychiatric disturbances.

The doctors treat these conditions daily. Their patients expect to be treated correctly. The practicing physician must acquaint himself with the physiology and the symptomatology of the mind. He must keep ahead. He must not stand still.

Several things have happened recently which indicate these trends. The practicing clinical psychologist is becoming a real factor in the larger communities and in educational centers. He treats psychological conditions. But can he differentiate clinical psychology and clinical medicine? The law



does not help, the people have not said, and physicians cannot tell. If this dictum is acceptable there is no line of demarcation. They are one and the same. But the psychologists desire this line. They want every one to think that the mind and the body are separate. The people will go to them for mental ills and to the doctor for physical ills. But who will decide which is which? Obviously, since the mind and the body are one, the diseases of both come under the jurisdiction of the physician and should be treated by him.

Physicians, however, should not condemn without investigation and consideration of all the many sides of the question. Many of the leaders in the fields of education, psychology and sociology look to medicine for leadership in the matter, and if we lead, they will follow. I quote from a recent letter written by an educational leader to a leader in the psychiatric field:

"The school men of the state have long been waiting for the medical men to take the initiative and leadership in a movement of this kind. We feel, and rightly so, I think, that unless the medical profession does assume the leadership of the movement the school people should not be called upon to substitute for them. The problems of mental hygiene are rightly referable to the field of medicine. The men of the schools will do their part in upholding the efforts of the physicians in problems of mental health, but enunciation of principles, the giving of sound advice and the total oversight of the movement, belong to the doctors. I am very anxious, therefore, that the physicians of the state shall be challenged as to their duty and opportunity. We educators, I assure you, will do our part."

From this expression, physicians can see that we are being looked to. We must assume our responsibility. The question arises, of course, as to how to do this. How can this new field be opened up by busy practitioners who already feel that they are swamped by new discoveries and new procedures? Every psychiatrist realizes that psychiatric education is only a small part of the medical curriculum. The problem on the surface seems insurmountable. It is not easy, but the following principles of action may help.

First, let us stop being negativistic about the subject. Let us stop saying, "I know nothing of these things." It is not a true statement. Every successful practitioner is a good psychologist, otherwise he would not be successful. Therefore, he does practice and does know. So if he would preach what he practices the first obstacle would be passed.

Second, he can learn those things the lack of which makes him think he does not know; namely, modern terminology. Kraepelin's terminology and its implications are the things that frighten him. But he can ignore that. Kraepelinism is on its way out. Dynamic biopsychiatry is the modern concept and in this school to name is unimportant. What causes it is theoretically important but has little

practical application. The cure is the thing. Treatment comes first, and any means which gets the patient well is justified. Once more defeatism enters the picture. The physicians are quite confident that nothing can be done, so why bother? They should be interested in knowing that some of the new procedures may soon be perfected for office use, and that modern private psychopathic hospitals have a recovery rate of better than 50 per cent. Psychiatry today is challenging the other fields of medicine to equal its results.

Early treatment means better results; the old attitude of wait and see, nothing can be done, anyhow, will only doom the patient to incurability. Today we must say, "This patient has an early mental disease. We must get to work now." This is no disgrace, it is a sickness. Take him to the hospital at once. Science can cure him now. To wait may be hazardous.

Third, the physician must be aware of his new problems and alert to every opportunity to improve his knowledge in this field. He must not be afraid of psychiatry. Once the gates are open, the subject is of commanding interest and becomes as simple as any other branch of medicine. The procedures of psychotherapy as they relate to general practice are constantly being publicized. Articles in the state journals and the *Journal of the American Medical Association* offer the general practitioner a liberal education on the subject. The physician should take the leadership in his community in an effort to help publicize these subjects to laymen and to other ethical practitioners. There is no more wholesome way to learn than by an interchange of ideas. The physician must drop the two contradictory ideas which permeate the profession. He says, "I don't know," and then he says, "They can't teach me anything." Again he says, "I don't need to know," and then spends all day practicing.

It is the holding of these impossible ideas and contradictory viewpoints which has made the cults possible. The physicians themselves are responsible for the growth of the cults, because they have shut their eyes and their ears to modern psychiatry.

Let us pick up the challenge that the new knowledge presents and recapture leadership in a too long neglected field.

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#### JEFFERSON CITY SESSION

The eighty-first Annual Session of the Missouri State Medical Association will convene in Jefferson City, May 2, 3 and 4, 1938. All sessions with the exception of dinner and luncheon meetings will be held in the House Chamber of the Capitol Building. The schedule of meetings will follow that of other years, the House convening on Monday, May 2, at 9:30 a. m. and 4:00 p. m. and on Wednesday, May 4, at 3:00 p. m.; the Council on Monday noon for a luncheon meeting at the Missouri Hotel and on Wednesday at 5:00 p. m., and General Meetings

on Monday at 1:15 p. m., and on Tuesday and Wednesday at 8:30 a. m. and 1:15 p. m.

The Maternal Welfare Committee will hold its third annual dinner meeting on Monday evening at the Missouri Hotel. Dr. Palmer Findley, Omaha, Nebraska, will preside at a round table discussion of maternal deaths which are reported by members as well as discuss other obstetric problems. Dr. Findley will deliver an address before the General Meeting on Tuesday. Dr. Findley is a member of the American Gynecological Society, the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, the American College of Surgeons and is a charter member and was first president of the Central Association of Obstetricians and Gynecologists.

Dr. J. H. J. Upham, Columbus, Ohio, President of the American Medical Association and Dean and Professor of Medicine of the Ohio State University School of Medicine, will be a guest speaker. Dr. George M. Curtis, Columbus, Ohio, Professor of Research Surgery at the Ohio State University School of Medicine, will also be a guest speaker.

The scientific program for the Session appears on page 155 of this issue.

Hotel reservations may be made by sending the reservation blank on page 27 of the advertising section to Dr. Frank W. Gillham, Jefferson City, Chairman of the Committee on Hotels.

Committees appointed for arrangements of the Annual Session are:

General Committee on Arrangements: Dr. W. H. Breuer, St. James, Chairman; Dr. A. J. Campbell, Sedalia; Dr. Curtis H. Lohr, St. Louis.

Local Committee on Arrangements: Dr. Irl B. Krause, Chairman, Dr. J. G. Bruce, Dr. James A. Hill, Jefferson City.

Committee on Reception and Transportation: Dr. James Stewart, Chairman; Dr. John W. McHaney, Subchairman (reception), Dr. S. V. Bedford, Dr. Cortez F. Enloe, Dr. J. D. Guyot, Jefferson City; Dr. Walter L. Leslie, Russellville; Dr. H. T. Leach, Elston; Dr. J. G. Bruce, Subchairman (transportation), Dr. Hugh W. Maxey, Dr. Harry B. Stauffer, Dr. Herbert I. Taylor, Dr. L. A. T. Meyer, Jefferson City; Dr. Clark S. Glover, Russellville; Dr. John F. Jones, Linn.

Committee on Hotels: Dr. Frank W. Gillham, Chairman, Dr. L. David Enloe, Dr. Walter B. Simpson, Jefferson City.

Committee on Publicity: Dr. Stanley P. Howard, Chairman; Dr. Cortez F. Enloe, Jefferson City; Dr. Frank J. Nichols, Centertown.

Committee on Registration: Dr. Herman S. Gove, Chairman; Dr. Harry F. Parker, Dr. James W. Chapman, Dr. C. F. Adams, Dr. J. D. Guyot, Jefferson City.

Committee on Scientific Exhibits: Dr. J. S. Summers, Chairman; Dr. M. R. Aldridge, Dr. W. W. Rambo, Dr. T. J. Kelly, Jefferson City; Dr. William Von McKnelly, Chamois.

Committee on Entertainment and Finance: Dr. Edward E. Mansur, Chairman, Jefferson City.

Committee on Special Evening Entertainment: Dr. R. P. Dorris, Subchairman; Dr. J. A. Ossman, Dr. Leon A. Taylor, Dr. S. P. Howard, Jefferson City; Dr. William Von McKnelly, Chamois.

Committee on Golf Tournament: Dr. L. David Enloe, Subchairman; Dr. James Stewart, Dr. J. T. Leslie, Dr. John W. Williams, Dr. S. V. Bedford, Dr. E. R. Rhodes, Jefferson City.

Committee on Skeet Shooting Tournament: Dr. J. A. Ossman, Subchairman; Dr. M. R. Aldridge, Dr. Edward E. Mansur, Jefferson City; Dr. F. J. Wessling, Hermann.

Committee on Bowling Tournament: Dr. T. J. Kelly, Subchairman; Dr. Herbert I. Taylor, Dr. H. B. Stauffer, Dr. J. T. Leslie, Jefferson City.

Committee on Finance: Dr. S. P. Howard, Subchairman; Dr. John W. McHaney, Jefferson City; Dr. Frank J. Nichols, Centertown.

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### ENTERTAINMENT AT THE JEFFERSON CITY SESSION

The Committee on Entertainment of the Cole County Medical Society for the Jefferson City Annual Session has extensive plans for the entertainment of members attending the Session. The committee is under the chairmanship of Dr. Edward E. Mansur, Jefferson City.

A stag party has been planned for Monday evening, May 2, following the Maternal Welfare Dinner, the time set approximately for 9 p. m. The Cole County Medical Society will be host.

On the following evening the Committee on Entertainment has planned a dance and surprise entertainment for members, their wives and friends. This will be held at the Missouri Hotel following the Woman's Auxiliary Bring-Your-Husband Dinner and is scheduled for 8:30 p. m.

The Committee has arranged competitive tournaments in golf, skeet shooting and bowling. In order that the Committee may make definite plans for these tournaments it must have at the earliest possible date the names of the members and their wives who will compete in these events. It is suggested that the officers of the county medical societies immediately appoint a special committee to ascertain from the members those desirous of entering the tournaments and immediately inform the chairman of the respective tournaments the names of the individuals who will participate.

Golf will be under the direction of Dr. David Enloe. The Country Club will be open to all members and arrangements for teeing off can be made for any time during the day upon consultation with the committee. Finals will be played at 4 p. m. daily.

The skeet tournament will be under the direction of Dr. J. A. Ossman and will be held at the Gun Club at 4 p. m. daily.



Bowling will be held daily at 4 p. m. at St. Peter's Hall and is under the direction of Dr. T. J. Kelly. It is the hope of the Committee that teams will be formed by the various county medical societies to enter the bowling tournament.

Trophies will be awarded in bowling to the highest scoring team and to individual winners in golf and skeet. The Committees request that all members interested in these activities communicate with them.

### FATTY ACIDS, ESSENTIAL NUTRIENTS

Painstaking study has accumulated the modern knowledge of nutrition. Unending laboratory research has uncovered one after another a variety of biochemical substances proved necessary to life. It has not been so many years since a hitherto unknown amino acid was discovered in milk and found to play a significant role in optimal nutrition. The importance of copper as a hemoglobin catalyst is the result of investigations within the last decade. Bit by bit nearly 40 so-called essential nutrients have been dissected out of the vast food stores of Nature.

In general, fats and fatty acids have been dismissed from the consideration of the nutrition specialist. When it was shown that vitamin A was supplied by carotene and that vitamin D might be supplied although poorly by irradiation of foods or skin, it seemed that fats held no significant place in the dietary. Indeed, there has been a trend in recent years to limit the fat intake of persons suffering from a variety of diseases, always in the hope that a salutary effect might be exerted on the underlying process. Perhaps the requirements of the whole man are being overlooked in the elaboration of what may appear in a few years as just another dietary fad.

At this time we are not aware of studies made on human beings which would show that fats or their acids play a vital role in the maintenance of optimal nutrition. Nevertheless clear cut results have been obtained when the rat is employed as an experimental animal. Since much sound modern dietary theory is based upon results achieved by the use of this animal it is pertinent to call attention to those investigations of the last few years which show highly unsaturated fatty acids to be essential nutrients.

A definite deficiency<sup>1</sup> results from the rigid exclusion of fat from the rat diet. It is characterized by scaldiness of the skin, necrosis of the tail and hematuria. It is not relieved by the inclusion of vitamins A and D in the diet. Animals deprived of all fat show several striking metabolic abnormalities. They fail to gain weight although they eat as much as control litter mates. Their metabolic rate is much increased which serves to explain the failure to gain weight on what appears to be a calori-

cally sufficient diet. This finding is further substantiated by the fact that they drink much more water than the controls, excrete the same volume of urine but lose much more water through their respiratory metabolism. An increase in the protein content of the fat free diet which is without significance in the control animals is accompanied by every evidence of increased kidney damage. The qualitatively starved females do not ovulate or conceive normally. They cannot carry their pregnancy to a successful culmination. The qualitatively starved males are usually sterile and show advanced testicular degeneration. These disturbances are not dependent upon the vitamin E content of the diet.

The fat free diet introduces profound alterations in the normal physiology of the rat. The respiratory quotient is elevated above unity<sup>2</sup> and this may be taken as evidence of the animal's attempt to synthesize the deficient substance from carbohydrate. These attempts are unsuccessful, else the syndrome described above would not result. However, the addition of a solid fat fraction derived from lard reduces the respiratory quotient below unity and the addition of a liquid fat fraction derived from lard reduces it much further. These physiological observations indicate the presence of some substance in lard necessary to optimal, even to adequate, nutrition.

While the rat can synthesize fat from carbohydrate during as much as twenty of the twenty-four hours it appears<sup>3</sup> that this fat is adequate to meet the nutritional needs of the animal. These studies do not clarify the causes of the increased heat production observed in the animal, a disturbance which is corrected upon the addition of the proper fatty acids to the diet.

The nature of this deficiency syndrome may be partially clarified by reference to the depletion of linoleic acid which takes place in the stores of newly weaned rats. This substance accounts for over 3 per cent of the fat in the body at the time of weaning. Yet, within eight weeks after the institution of a fat free diet, it constitutes less than 1/3 of 1 per cent of the total fat stores. Indeed, feeding experiments confirm the supposition that it is linoleic acid and perhaps other highly unsaturated fatty acids which are responsible for the deficiency syndrome manifested by the animals. The inclusion of small amounts of various oils in the diets of the experimental rats showed that those containing large amounts of highly unsaturated fatty acids were most efficient in producing a cure.

While the liver is undoubtedly able to bring about a certain degree of unsaturation in the fatty acids formed from carbohydrate it is unable to produce fatty acids sufficiently unsaturated to meet

2. Wesson, L. G., and Murrell, F. C.: A Dietary Factor Concerned With Carbohydrate Metabolism, *J. Biochem.* **102**:303, 1933.

1. Burr, G. O., and Burr, M. M.: Fatty Acids in Nutrition, *J. Biochem.* **86**:587, 1930.

3. Burr, G. O., and Berber, A. J.: Fat Deficiency in Rats, *J. Nutrition* **14**:553, 1937.

the needs of the rat economy. These must be supplied through the diet. These studies indicate that a new essential nutrient must be added to the long list of those already recognized. They suggest a danger possibly inherent to the thoughtless prescription of diets in which fats and fatty acids are too rigidly limited.

The authors whose work has been discussed here make no effort to apply their laboratory investigations to the interpretation of the diet of the human being. However, they do make the cautious suggestion<sup>1</sup> that "it is possible that our high carbohydrate and protein diets, carrying very little of the unsaturated oils are contributing factors to poor health. The addition of egg yolk and cod liver oil to diets may often improve the health of the patient because of the fatty acid rather than the vitamin content. For example cures of anemia with cod liver oil have been reported and it has been shown that there is a relation between experimental anemia and the unsaturated fatty acids of the blood plasma. The prevalence of dry skins and abnormal kidneys may be directly attributable to improper fat intake."

Here is a fruitful field for further clinical investigation.

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### THE MEANING OF THE SCHOOL HEALTH PROGRAM

Because of the unsettled economic condition of the country at large the youth of today are obtaining more formal education than youth at any other period of our national history. The age to which compulsory education must be pursued has been gradually advanced. The difficulty of finding gainful employment has caused many children to remain longer in school than did their parents. The force of education as a means of preparation for life is greater today than it has ever been. There is more of it. Its fundamental concepts have been improved. Its technic has been bettered. Indirectly, this increased exposure of youth to the educative forces of the community cannot fail to have a beneficial effect on the attitude of the coming generation toward organized medicine as a healing agency.

In many school systems of this state a medical department has become an integral part of the educational machinery. It functions variously to promote the health of the child. Regular medicine is the only healing system that is officially recognized by the laws governing the various boards of education. In that respect the school medical department offers a powerful ally to the general profession in its efforts to promote health through the control of contagious diseases, through the detection and correction of physical defects and in the management of the emotional disturbances.

Each child in the modern public school system is brought into intimate contact with the practices of scientific medicine as he receives the examinations

conducted by members of the school medical department. Indirectly he cannot fail to be impressed with the benefits which proper medical treatment may confer upon him. Frequently his parents are likewise brought into intimate acquaintance with the virtues of modern medicine through personal conference with the physicians and nurses who form the backbone of the medical department.

Physicians as a group should be vitally concerned over the extension of the activities of this department. It affords them a single avenue of publicity. It affords them contact with each member of the coming generation. It spreads the tenets of medicine without seeming to do so—the most effective type of all publicity.

Indirectly this widespread activity of school medical departments is not without its beneficial effects upon the practice of each doctor in the community. We have been able to obtain figures in regard to the activities of this department in only one community in the state, its largest city. In that city over half the children in the entire public school system consulted a physician one or more times during the last year at the behest of the medical department. The incalculable benefit that accrued to these individuals through their earlier contact with competent healing agencies cannot even be estimated. The incipient disease nipped before it made vast inroads upon the constitutional integrity of the individual, the minor illness for which medical treatment was obtained that earlier healing might take place, the improvement in bodily well-being and in physiologic function which followed upon the prescription of the private medical practitioner can only be guessed at.

It is extremely pertinent to mention that well over half the children who received medical care directly at the instigation of the school medical department went to a physician in private practice. Fewer than half of them went to a free clinic.

In innumerable ways school medical departments are performing a very vital function in the various communities of the state. Not the least of these is the constant emphasis which they place upon the private practitioner as the sole and proper therapeutic agency. In some communities the activities of this department are under the sole direction of nurses who have received special training in the public health field. Nurses, alone, are not enough. Every effort must be made to insure the active participation of thoroughly trained physicians. They, only, are competent to determine the existence of contagious disease, of physical defects, of emotional maladjustments. They must be depended upon to further the interests of organized medicine through the unique contacts with the general public which their positions afford. The scope of their activities must be increased, not alone for their value to the public at large but also on account of their value to the profession in general.

In all matters affecting the education of youth the physician has a vital interest, for education



points the way toward better living. Physicians throughout the state should constantly seek an extension of the activities of the school medical departments. They should be engaged in the active support of such measures, including the imposition of adequate taxes, as will make certain the wider dispersion and utilization of this department for it adds to the public welfare at the same time that it publicizes the capacities and abilities of organized medical practitioners.

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## NEWS NOTES

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Dr. Quitman U. Newell, St. Louis, was a guest of the Southeastern Surgical Congress at its ninth annual assembly in Louisville, Kentucky, on March 7, 8 and 9 and spoke on "The Interposition Operation for Prolapsus Uteri."

The Trudeau Club of St. Louis held a joint session with the St. Louis Medical Society on March 8 in the St. Louis Medical Society Building. Dr. William A. Hudson, Detroit, spoke on "Collapse Therapy: Its Principles and Application."

Dr. August A. Werner, St. Louis, was a guest of the Iowa State Medical Society Postgraduate Committee at Council Bluffs, Iowa, on February 14 and spoke on "The Relationship of the Anterior Pituitary and Gonads in the Female."

Dr. A. N. Lemoine and Dr. Victor H. Bergmann, Kansas City, addressed the Biological Club of the University of Kansas, Lawrence, on February 8. Dr. Lemoine talked on "Endocrine Disturbances" and Dr. Bergmann on "Personality in Relation to Edocrinology."

Dr. Victor H. Bergmann and Dr. Frank M. Postlethwaite, Kansas City, were guests of the Bourbon County (Kansas) Medical Society recently. Dr. Bergmann spoke on "The Common Dysfunctions of the Ovary in Endocrinology" and Dr. Postlethwaite talked on "The Treatment of Rectal Diseases by Office Procedures."

Plans have been completed for the Annual Spring Conference of the St. Louis Clinics to be held in St. Louis May 23 to 28, inclusive. All clinics are to be held at the St. Louis Medical Society Auditorium with the exception of those clinics on Tuesday and Friday which are to be conducted at Firmin Desloge and Barnes hospitals, respectively. Further information will appear in the next month's issue of THE JOURNAL. Those desiring early information may write the office of the St. Louis Clinics, 3839 Lindell Boulevard, St. Louis.

Dr. George H. Thiele, Kansas City, was a guest of the Butler-Greenwood County (Kansas) Medical Society at Eldorado, Kansas, on February 11 and spoke on "Anorectal Complaints."

Dr. Harry S. Parker, Jefferson City, Commissioner of Health, will conduct a public health meeting in Jefferson City in the House Chamber of the Capitol Building on May 14. Dr. Thomas Parran, Surgeon-General, United States Public Health Service, Washington, D. C., and Governor Lloyd C. Stark, Jefferson City, will address the session. The meeting will be open to all physicians and to representatives of all agencies interested in public health.

Dr. A. William Lescoghier was elected president of Parke, Davis & Company, Detroit, and Norman H. F. McLeod chairman of the finance committee of the company on March 1. Both men have been actively connected with the company for about thirty years. Dr. Lescoghier has been general manager and a director since 1929, and Mr. McLeod a member of the board since 1921 and secretary and treasurer since 1923. Dr. Lescoghier succeeds Oscar W. Smith who had been president of the company for sixteen years until his death on February 7, 1938. Mr. McLeod continues as secretary and treasurer of the company as well as a director.

May 1 has been designated as Child Health Day for 1938 with supplementary observances on April 30 and May 2. Child Health Day activities are sponsored by the Children's Bureau at the request of the state and provincial health authorities of North America in accordance with the Congressional Resolution of May 18, 1928, which authorized the President to proclaim May Day as Child Health Day. The slogan for this year is "Speed Children on the Road to Health." The objective is to encourage every community to make full use of its resources in order to insure to children safe birth, normal growth and protection against disease and accident in their progress from infancy to maturity.

The fifth series of network health programs is being presented by the American Medical Association and the National Broadcasting Company. This series began in October, 1937, and will run through June 15, 1938. The programs are presented over the Red network each Wednesday at 1 p. m. central standard time. The stations on the Red network are privileged to broadcast the program but since it is a noncommercial program they are not obliged to do so. The American Medical Association suggests that interest on the part of medical societies, women's auxiliaries and others may have weight with program directors of local stations, that a personal visit to the program director of local stations

might be advisable or a committee of county medical societies might indicate their interest and enlist the interest of other groups.

The St. Louis County Medical Society and the St. Louis County Health Department are sponsoring talks and the showing of a talking film "The House of Vision," in the interest of conservation of eyesight. Dr. Alan D. Calhoun, St. Louis, spoke to five classes of the Hancock High School, Luxembourg, on March 18, on "Conservation of Eyesight" and presented the film. Dr. Clyde P. Dyer, St. Louis, spoke before the Webster Groves Rotary Club and showed the film on March 18. The joint committee of the Society and the Health Department in charge of the work is composed of Drs. Clyde P. Dyer, St. Louis, Chairman; Alan D. Calhoun, Leslie C. Drews, A. G. Hobbs and C. L. Hobbs, St. Louis; W. H. Bailey, Normandy, and Walter A. Zeitler, Jennings.

The American Express Travel Service is cooperating with societies in a "See America" route to and returning from the San Francisco American Medical Association Session. The "See America" movement by deluxe special trains has been endorsed by approximately twenty-five of the state associations. It presents an opportunity for members and their families to join with their colleagues from other states and enjoy the facilities and service of deluxe trains and visit the many scenic attractions in the western states. The tour includes an Indian detour in New Mexico, the Grand Canyon of Arizona, Los Angeles and the beauties of Southern California, Santa Catalina Island, the famous Columbia River Highway in Oregon, Seattle, Victoria in Vancouver, Lake Louise and Banff in the Canadian Rockies, Yellowstone National Park, Colorado Springs and other places. The all-inclusive price is unusually low because of the cooperation of so many medical societies. A folder describing these travel arrangements may be obtained through the Secretary's office or the transportation agents, The American Express Travel Service, 1010 Locust Street, St. Louis.

The St. Joseph Clinical Society will hold its seventh annual spring clinic on April 13 and 14 at the Hotel Robideaux, St. Joseph. There will be no registration fee. The purpose of the meeting is to offer a concentrated postgraduate course in recent advances in clinical medicine and surgery in subjects of interest to the general practitioner as interpreted by eminent clinicians in their respective fields. In the six previous sessions fifty-one guest speakers, representing leaders of the profession in the Midwest, have taken part in the programs. The list of guest speakers for the 1938 session presents an especially attractive series of clinical lectures. Two luncheons and banquets are planned. The

St. Joseph Society extends a cordial invitation to all members of the medical profession who may wish to attend this clinical meeting. Out of state guests will be Drs. Clifford G. Grulee, and W. H. Cole, Chicago; R. Russell Best, Omaha, Nebraska; Horace M. Korn, Iowa City, and Henry H. Turner, Oklahoma City. Drs. Thomas G. Orr, Kansas City, and Rogers Deakin, Ernest Sachs, Robert D. Alexander and Hugo Ehrenfest, St. Louis, will be guest speakers on the program. St. Joseph men appearing on the program are Drs. James O'Donoghue, Ralph V. Byrne, T. L. Howden and Robert S. Minton.

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Abbott Laboratories

Sulfanilamide—Abbott

Tablets Sulfanilamide—Abbott, 5 grains

Tablets Sulfanilamide—Abbott, 7½ grains

Ampoules Ephedrine Hydrochloride 5 per cent and Procaine Hydrochloride 1 per cent, 1 cc.

Ampoules Ephedrine Hydrochloride 2½ per cent and Procaine Hydrochloride 1 per cent, 2 cc.

Ampoules Silver Nitrate Solution, 1 per cent

Hypodermic Tablets Procaine Hydrochloride, 1/3 grain—Epinephrine 1/4000 grain

Billhuber-Knoll Corporation

Metrazol Sterile Aqueous Solution, 10 per cent

Hypodermic Tablets Dilaudid Hydrochloride, 1 mg. (1/64 grain)

Hypodermic Tablets Dilaudid Hydrochloride, 1.25 mg. (1/48 grain)

International Vitamin Corp.

I. V. C. Viosterol (A. R. P. I. Process) in Oil

I. V. C. Cod Liver Oil Vitamin Concentrate Tablets

Lakeside Laboratories, Inc.

Ampoules Mercury Succinimide 0.01 Gm. (1/6 grain)

Lederle Laboratories

Mixed Grasses Pollen Antigen—Lederle (June Grass, Orchard Grass, Sweet Vernal Grass, Red Top and Timothy in equal parts)

The following members accepted invitations of the Postgraduate Committee to deliver addresses at recent meetings of component societies and lay meetings:

Dr. Logan Clendening, Kansas City, was a guest of the Jasper County Medical Society at Joplin on January 11 and spoke on "Interesting Hospitals."

On January 20 Drs. Dudley S. Conley and M. Pinson Neal, Columbia, were guests of the Moniteau County Medical Society at California. Drs. Conley and Neal were guests of the Lafayette County Medical Society on January 25 at Lexington. Dr. Conley spoke on "Trend in Medical Affairs" and Dr.



Neal spoke on "The Leukemias and Their Blood Findings."

The South Central Counties Medical Society had as guests on February 3 at Houston Drs. O. P. Falk, C. K. Higgins and Andrew B. Jones, St. Louis. Dr. Falk talked on "Treatment of Hypertension and Its Complication"; Dr. Higgins on "Present Day Therapy of Varicose Veins," and Dr. Jones on "The Neuroses or Mild Mental Illnesses."

Drs. August A. Werner and John H. Hershey, St. Louis, were guests of the Marion-Ralls Counties Medical Society at Hannibal on February 4. Dr. Werner spoke on "Anterior Pituitary Relationships in the Female" and Dr. Hershey discussed "Surgery of the Stomach."

The Randolph-Monroe Counties Medical Society had as its guest on February 8 at Moberly Dr. G. F. Hardy, St. Louis, who spoke on "Otitis Media." On March 8 Dr. B. Y. Glassberg, St. Louis, was a guest of the Society and spoke on "Differential Diagnosis and Treatment of Diabetes."

Drs. M. Pinson Neal and Dudley S. Conley, Columbia, were guests of the Sixth Councilor District at Sedalia on February 14. Dr. Neal spoke on "Pneumonia and Its Complications As Viewed by a Pathologist," and Dr. Conley gave "A Message From Your President."

Drs. C. H. Neilson and John J. Hammond, St. Louis, were guests of the Jasper County Medical Society at Joplin on February 22. Dr. Neilson discussed "High Blood Pressure," and Dr. Hammond spoke on "Myocarditis."

The Cole County Medical Society had as its guest on March 9 at Jefferson City Dr. C. E. Burford, St. Louis.

The Phelps-Crawford Counties Medical Society had as guests on March 14 at Rolla Drs. R. S. Battersby and M. Pinson Neal, Columbia. Dr. Battersby talked on "Infantile Diarrheas," and Dr. Neal on "The Anemias and Their Diagnosis."

Lectures on "Appendicitis" were presented by Drs. M. Pinson Neal and Dudley S. Conley, Columbia, and Eugene P. Hamilton, Kansas City, on March 17 before lay audiences in the following towns: Glasgow, New Franklin, Prairie Home, Fayette (two lectures), Boonville (three lectures), Blackwater and Pilot Grove.

## MISCELLANY

### BUDGET FOR 1938

Salaries (Office and JOURNAL) .....	\$12,500.00
Printing of JOURNAL .....	6,300.00
Legislation .....	1,000.00
Defense .....	1,000.00
Postage .....	700.00
Postgraduate Work .....	1,000.00
Printing and stationery .....	800.00
Traveling expenses, Secretary and Assistant Secretary .....	1,100.00
Telephone and telegraph .....	800.00
Rent of office and light .....	1,600.00
Meetings (Annual Session, Council, Committees) ..	3,000.00
Miscellaneous .....	800.00
Total .....	\$30,600.00

## FINANCIAL STATEMENT FOR 1937

R. A. LENNERTSON & COMPANY  
ACCOUNTANTS  
SAINT LOUIS

Feb. 26, 1938.

Missouri State Medical Association,  
St. Louis, Missouri.

Gentlemen:

We have completed our examination of the accounts of the Missouri State Medical Association for the year 1937 and prepared therefrom the following attached exhibits:

- Exhibit A. Balance Sheet as of December 31, 1937.
- Exhibit B. Statement of Income and Expenses for the year 1937.
- Exhibit C. Summary of Cash Receipts and Disbursements by Funds for the Year 1937.
- Exhibit D. Dues Receivable and Membership by Counties, December 31, 1937.

### SCOPE OF EXAMINATION

The asset and liability accounts of the Association at December 31, 1937, were verified as set forth in the comments thereon under the caption "Balance Sheet."

Cash receipts for members' dues, JOURNAL income and rent for office and exhibition space, as shown by the cash record, were traced in total into the bank account as deposits. Cash disbursements were verified with paid cheques, purchase invoices and other available data. Selective tests were made of the income and expense accounts for the year 1937 and the accounts examined were found correct. Space in THE JOURNAL not occupied by articles, editorials, etc., or by paid advertisements has been filled by publishing reciprocal and complimentary advertisements.

### STATEMENT OF INCOME AND EXPENSES

The financial result of the Association's activities for the year 1937 was an excess of income over expenses in the sum of \$857.00 as set forth in Exhibit B. A summary thereof follows:

Particulars	General Activities	JOURNAL Publication	Together
Income .....	\$20,558.25	\$13,572.00	\$34,130.25
Expenses .....	20,283.39	12,989.86	33,273.25
Net income .....	\$ 274.86	\$ 582.14	\$ 857.00

The net income of \$857.00 for the year 1937 is in excess of the net income for 1936 which amounted to \$387.14.

### BALANCE SHEET

The Balance Sheet of the Missouri State Medical Association, Exhibit A, shows that the Association has continued to maintain a sound financial position. Comments on the Balance Sheet accounts follow.

Cash in the sum of \$11,040.06 consists of the items listed hereunder:

Mercantile-Commerce Bank and Trust Co. ....	\$10,849.25
Secretary's account .....	165.81
Petty cash fund .....	25.00
Total .....	\$11,040.06

The cash in bank was verified with a certificate obtained from the depository and the cash on hand was counted. The Secretary's account represents the unexpended portion of funds held by him for the payment of small bills. A summary of the cash receipts and disbursements by funds is given in Exhibit C.

Accounts receivable due from advertisers in the sum of \$946.78 at December 31, 1937, were substantiated by a review of the individual ledger sheets. These accounts are regarded as good and collectible by the management. During the period under review, accounts in the sum of \$76.38 were charged off as uncollectible.

Dues receivable in the sum of \$5,821.00 were determined by an examination of the membership cards and a summary of the amounts due by years follows:

Year 1934 and prior .....	\$ 989.00
Year 1935 .....	724.00
Year 1936 .....	1,075.00
Year 1937 .....	3,033.00
Total .....	\$5,821.00

The unpaid dues are offset by a reserve account in a like amount pending the collection of the delinquent items as dues are taken up on the books as income only upon receipt of the cash. Exhibit D is a statement of dues receivable and membership by counties and shows a membership of 3255 members. This is an increase of thirty-eight members over the number at the end of the preceding year.

Additions to the furniture and fixture account during the year 1937 in the sum of \$292.21 were verified with purchase invoices. The total of this account at December 31 was \$1,747.11 which amount was written down to \$1,000.00 by a charge to

surplus of \$747.71 representing the estimated accumulation of depreciation not heretofore written off. Fire insurance in the sum of \$1,000.00 is carried on the office equipment, books and supplies.

The records of the Association were carefully reviewed for liabilities and the sum of \$285.93 shown on the Balance Sheet is believed to be the total amount of direct liabilities. A contingent liability exists in the sum of \$3,300.00 on eleven malpractice suits reported pending against members under the provision of the By-Laws to furnish assistance in an amount not to exceed \$300.00 in each case. The total expense in connection with the defense of malpractice suits during 1937 was \$891.00.

## GENERAL

Fidelity bonds are in effect covering Dr. E. J. Goodwin in the sum of \$1,000.00 and Dr. J. R. Caulk in the sum of \$20,000.00. The books and records examined were found to be neatly written and accurately maintained throughout the year.

Yours very truly,

R. A. LENNERTSON & COMPANY,  
By R. A. Lennertson,  
Certified Public Accountant.

## EXHIBIT A.

MISSOURI STATE MEDICAL ASSOCIATION  
BALANCE SHEET AS OF DECEMBER 31, 1937

Assets		
CASH:		
General Fund	\$1,348.67	
Legislative Fund	4,001.63	
Sinking Fund	4,269.00	
Defense Fund	1,420.76	
	\$11,040.06	
Accounts Receivable—Advertisers	946.78	
Dues Receivable—Exhibit D	5,821.00	
Furniture and Fixtures	1,000.00	
Prepaid Traveling Expense	10.61	
	\$18,818.45	
Liabilities		
Accounts Payable:		
Supplies and Expense	\$ 62.04	
Advance Payments by Advertisers	223.89	
	285.93	
Contingent Liability:		
To members on 11 Malpractice Suits	\$3,300.00	
Reserve for Uncollected Dues	5,821.00	
Reserve for Fund Balances:		
General Fund	1,348.67	
Legislative Fund	4,001.63	
Sinking Fund	4,269.00	
Defense Fund	1,420.76	
	11,040.06	
Surplus	1,671.46	
	\$18,818.45	

## EXHIBIT B.

MISSOURI STATE MEDICAL ASSOCIATION  
STATEMENT OF INCOME AND EXPENSES  
FOR THE YEAR 1937

	General Activities	JOURNAL Publication	Together
INCOME:			
Dues Received (Includes \$1.00 Per Member Annually for THE JOURNAL)	\$19,613.25	\$ 2,897.00	\$22,510.25
Rentals—Annual Session Exhibit Space	405.00		405.00
Rent from Subtenant (Office Space)	540.00		540.00
Subscriptions to THE JOURNAL—Nonmembers		86.75	86.75
Advertising Space—THE JOURNAL		10,588.25	10,588.25
Total Income	\$20,558.25	\$13,572.00	\$34,130.25
EXPENSES:			
Officers' Salaries	\$ 5,509.84	\$ 3,290.00	\$ 8,799.84
Office Salaries	2,240.00	1,340.00	3,580.00
Office Rent and Light	1,603.04		1,603.04
Postage	804.98	312.36	1,117.34
Stationery, Printing and Office Supplies	803.21		803.21
THE JOURNAL—Paper, Printing, Mailing, etc.		6,311.83	6,311.83
Telephone and Telegraph	905.52		905.52
Insurance	61.63		61.63
General Expense	1,226.12		1,226.12
Bad Debts		76.38	76.38

Cash Discounts to Advertisers		405.79	405.79
Commissions on JOURNAL Advertising	1,251.97		1,251.97
Sales Tax	1.53		1.53
Traveling Expense—Assistant Secretary	1,087.18		1,087.18
Badges	69.39		69.39
Meetings	2,994.31		2,994.31
Cancer Committee Meeting	557.00		557.00
Postgraduate Meetings	523.11		523.11
Legislative Expense	1,007.06		1,007.06
Defense—Malpractice Suits	891.00		891.00

Total Expense	\$20,283.39	\$12,989.86	\$33,273.25
Net Income for the Period	\$ 274.86	\$ 582.14	\$ 857.00

## EXHIBIT C.

MISSOURI STATE MEDICAL ASSOCIATION  
SUMMARY OF CASH RECEIPTS AND DISBURSEMENTS BY FUNDS FOR THE YEAR  
1937

	General Fund	Legislative Fund	Sinking Fund	Defense Fund
Balance January 1, 1937	\$ 2,186.06	\$3,511.69	\$3,289.00	\$ 911.76
Receipts	32,781.11			
Transfer of Funds		2,897.00	980.00	1,400.00
Total to Be Accounted for	\$34,967.17	\$6,408.69	\$4,269.00	\$2,311.76
Disbursements	\$29,741.50	\$1,007.06	\$	\$ 891.00
Transfer of Funds	3,877.00	1,400.00		
Total Disbursements	\$33,618.50	\$2,407.06	\$	\$ 891.00
Balance December 31, 1937	\$ 1,348.67	\$4,001.63	\$4,269.00	\$1,420.76

## FUND BALANCES DECEMBER 31, 1937

General Fund	\$ 1,348.67
Legislative Fund	4,001.63
Sinking Fund	4,269.00
Defense Fund	1,420.76
Total	\$11,040.06
Represented by:	
Cash in Mercantile-Commerce Bank and Trust Co.	\$10,849.25
Secretary's Account	165.81
Petty Cash Fund	25.00
Total	\$11,040.06

## EXHIBIT D.

MISSOURI STATE MEDICAL ASSOCIATION  
DUES RECEIVABLE AND MEMBERSHIP  
BY COUNTIES AS OF DECEMBER 31, 1937

Counties	1934 and Prior	1935	1936	1937	Total	No. of Pre-Mem- bers	paid Dues
Adair-Schuyler-Knox-Sullivan	\$ 16	\$ 16	\$ 16	\$ 24	\$ 72	27	
Atchison			8	8	16	14	
Audrain				8	8	17	
Barry						7	
Barton		8	8	8	24	10	
Bates	24	16	24	32	96	17	\$ 8
Benton						7	28
Boone	40	32	32	48	152	47	108
Buchanan		16	24	112	152	112	32
Butler				24	24	20	
Caldwell							
Livingston	48	24	24	24	120	19	
Callaway				8	8	22	20
Camden						2	
Cape Girardeau		8	16	32	56	38	
Carroll	32	16	24	32	104	9	
Carter-Shannon				8	8	9	
Cass	8	8	16	24	56	18	
Chariton						17	56
Christian	24	8	8	8	48	7	16
Clark				8	8	3	
Clay			24	56	80	32	16
Clinton		16	16	16	48	7	40
Cole			16	24	40	33	8



Counties	1934 and Prior	1935	1936	1937	Total	No. of Mem- bers	Pre- paid Dues
Cooper	56	32	32	84	204	20	
Dallas							
Hickory-							
Polk		8	8	36	52	18	
De Kalb	16	8	16	16	56	3	
Dent						5	
Dunklin	24	40	40	40	144	20	
Franklin	16	8	8	8	40	22	
Gasconade-							
Maries							
Osage	48	24	23	32	127	6	
Gentry	16	8	16	16	56	7	16
Greene	8	16	56	88	168	99	
Grundy-							
Davies	45	24	40	40	149	19	
Harrison	32	8	8	16	64	6	4
Henry	24	8	8	8	48	15	24
Holt						8	
Howard						8	8
Jackson				56	56	583	36
Jasper	8	16	16	32	72	67	
Jefferson						16	12
Johnson	8	8	8	16	40	17	80
Laclede				24	24	12	56
Lafayette		8	52	104	164	31	8
Lawrence-							
Stone	64	24	24	64	176	21	
Lewis						4	
Lincoln						9	
Linn			8	32	40	14	
Macon						7	
Marion							
Ralls	8	8	24	72	112	35	
Mercer			8	16	24	7	8
Miller	32	16	16	16	80	10	
Mississippi						7	
Moniteau						6	
Montgomery				16	16	8	
Morgan						3	
New Madrid	24	16	16	16	72	3	
Newton	24	8	8	37	77	14	
Nodaway	96	48	64	80	288	25	
Pemiscot				8	8	14	72
Perry						4	32
Pettis		8	8	16	32	31	144
Phelps-							
Crawford				40	40	24	72
Pike				8	8	13	
Platte				16	16	15	16
Pulaski						7	
Putnam	8	16	16	24	64	6	
Randolph-							
Monroe	40	32	40	72	184	32	8
Ray		32	40	56	128	13	
St. Charles		8	8	40	56	30	
St. Francois-							
Iron-Madison-							
Washington-							
Reynolds	32	16	24	48	120	36	24
Ste. Genevieve						6	48
St. Louis County	40	52	64	164	320	156	32
St. Louis City	16		8	896	920	1087	184
Saline			16	24	40	26	
Scotland		8	8	16	32	4	
Scott			8	8	16	12	24
Shelby	32	16	16	24	88	8	
Howell Oregon-							
Texas-Wright							
Douglas			24	40	64	31	4
Stoddard	40	16	16	16	88	10	
Taney	40	8	8	8	64	2	
Vernon-Cedar		8	16	24	48	30	
Wayne				8	8	4	
Webster				8	8	5	
Totals	\$989	\$724	\$1075	\$3033	\$5821	3255	\$1244

### OUR 1938 MEETING PLACE

Jefferson City is a capital city in many ways. As the capital of the State of Missouri, it has a political and commercial activity that is unknown to most cities. As the trading and distribution center of central Missouri, it has become the largest city in that section of the state and one of the most important. It is a city of approximately 25,000, located in the center of a state containing a population of more than 3,600,000. Situated on the Missouri River about halfway between St. Louis and Kansas City, Jefferson City is within a few miles of both the geographic and population centers of the state.

Missouri, of course, is centrally located in the Mississippi Valley near the geographic center of the nation.

In the days of the Louisiana Territory, a boat landing on the Missouri River marked the site around which Jefferson City was to develop later. It was a small river settlement at the time Missouri was admitted to the Union in 1821. In that year the first state assembly met in the temporary capital at St. Charles and appointed a commission to select a permanent capital site. The commissioners recommended the little river town about 125 miles west of St. Louis later to be known as Jefferson City. A bill designating this site as the permanent capital was passed by the legislature in 1821 and approved by the first governor of the state, Alexander McNair. The capital commissioners were then directed by the legislature to lay out a town of at least 1000 lots and to lay out a certain number of streets of a minimum width. This original plan was prepared by Major Elias Bancroft and the town laid out in 1822. Jefferson City was incorporated in 1825. From 1830 to 1860 it was being settled by German immigrants who were coming into Missouri. The city grew slowly, however, and by 1860 had a population of only 3000. During the next forty years the rapid development of railroads, machinery and commerce resulted in the rapid growth of urban centers and by 1900 the population of Jefferson City was almost 10,000. More remarkable has been the city's population growth since that date.

Closely linked with the development of Jefferson City is the history of the State Capitol Building. After the legislature had approved the Jefferson City site in 1821, Daniel Boone, Jr., son of the famous pioneer, was commissioned to survey the land for the first Capitol. The contract for the construction of the building was let in 1823 and the building completed in 1826. This building served until it was destroyed by fire in 1837. A new Capitol was completed in 1840. This Capitol Building burned down in 1911. The present Capitol, outstanding in art and architectural features, was completed in 1918 although not dedicated until 1924. In this building, in addition to the state offices, are the Soldiers' and Sailors' Museum and a splendid museum of history, natural history and agriculture.

The following information on the Benton murals is taken from a "Souvenir" of the Missouri State Capitol.

### The Benton Murals

Thomas Hart Benton, the noted Missouri artist, is a grandnephew of the distinguished Missouri statesman of the same name. He was born at Neosho, Missouri. Young Benton studied art in Chicago and spent eight years of his life as a student in the art centers of Europe. His latest work, in the artist's opinion his best, is to be found in the Lounge of the Missouri House of Representatives. A study of the Benton Missouri murals reveals three outstanding characteristics of his style; they are vivid in color, the rugged figures stand out from the wall as if chiseled in marble, they have great depth. For the sixteen months of work Benton received \$16,000.

The northwest panel from the corner of the room to the door is the story of pioneer life in territorial days. The panel to the right of the north door and extending to the corner tells about the days of slavery and religious development. Turning the corner one is confronted with Daniel Boone in typical garb with the inevitable "hound dogs." The horse traders are plying their trade. Fulton's steamboat in simple form plies the river—a typical political meeting is shown near the old court house at Bowling Green—the war clouds of the war between the states are shown high on the wall with a typical Missouri guerrilla warfare and lynching beneath. Next, a pioneer log cabin with pioneer home life is depicted.

Crossing to the right of the door one enters modern times. First is the present day agriculture of our state.

The scene quickly shifts to that of an average circuit court. Next, a miner with his drill reminds one of Missouri's great mineral resources, especially its lead and zinc. When one turns the corner he is confronted with St. Louis and its two outstanding industries, the shoe factories and the breweries. The southwest panel to the right of the door shows present day Kansas City. In the foreground is the outstanding industry of that city, its packing plants. Near at hand is the Nelson Art Gallery.

The history of a state or nation is not complete without a reference to its legendary characters, which have been the inspiration of artist, poet and writer. Over the north door is a panel reminiscent of characters immortalized by Mark Twain. One may see Huckleberry Finn, Nigger Jim, the turtle on the log, the old raft, Tom Sawyer and a steamboat with the name "Sam Clemens" in gilded letters on its side. Above the south door is to be found Missouri's Robin Hood, Jesse James, in the act of a train holdup.

## VENEREAL DISEASES IN MISSOURI

G. V. STRYKER, M.D.

Chairman, Committee on Study of Control of Syphilis, Missouri State Medical Association

ST. LOUIS

AND

JOHN W. WILLIAMS, M.D.

Assistant State Health Commissioner

JEFFERSON CITY, MO.

As a part of the national movement toward the control of venereal diseases the Missouri State Board of Health is formulating a program in conjunction with the Syphilis Committee of the Missouri State Medical Association which it is hoped will decrease the incidence and by adequate treatment prevent the infectious relapse and the late manifestations of these diseases.

How great the problem is in Missouri can only be approximately estimated by basing the incidence upon the survey made by the United States Public Health Service and the American Social Hygiene Association. This survey would indicate that the venereal diseases are the most prevalent of all communicable diseases. From this data and on a population basis we would expect about 15,600 new cases of syphilis and about twice this number, 30,000 new cases of gonorrhea each year. For many years syphilis, gonorrhea and chancroid have been reportable diseases and it is reasonable to suppose that a majority of the patients so afflicted would be seen by a physician and reported.

An analysis of the reports of communicable diseases for January, February and March, 1937, brings out some interesting facts. During the first quarter of the year only 1054 new cases of syphilis were reported to the State Health Department although it would be expected that there would be approximately 3900. The large metropolitan areas, St. Louis, Kansas City and St. Joseph, plus the counties of St. Louis, Buchanan, Jackson, Greene and Cole although comprising only 44 per cent of the population reported 86 per cent of the cases. This would apparently indicate the disease was more than nine times as prevalent here as elsewhere in the state. It seems rather an absurd situation to find only 148 cases of syphilis in 109 counties with a population of approximately 2,000,000 people in a three month period of time or one new case per 4500 population per year while the general expectancy in the United States is about one in 250 per year.

Further analysis of the reports shows that the infor-

mation requested on the report card is inadequately supplied although regulations require that location, age, sex, color, marital status and date of the infection be supplied. Less than one in ten of the reports were completed and furnished this essential data.

Approximately one third of the cards classified the patients by color, and less than one half by sex, and only fifty-four by stage of the disease.

It was obvious from the reports received during this period that either the great majority of cases, especially in the rural area, were not being seen by physicians or that the physicians were not reporting their cases and even when reported the information was inadequate. Believing that it was a case of not reporting, on July 1 a report form was enclosed with each positive serological report from the State Laboratory, and another study of the communicable disease cards made for the third quarter, July, August and September, 1937.

During this later period 2287 cases of syphilis were reported against 1054 during the first three months of the year. The proportion of cases in the 109 rural counties increased to approximately one in three reported. In a like manner the other data found on the card increased in amount although it is still far too scant for significant conclusions.

A study of the gonorrhea reports finds the same set of circumstances as found with syphilis. Although we would ordinarily expect to find twice as many cases of gonorrhea as syphilis, actually there were only a few more than half as many reported as there were of syphilis. The other information was also incomplete and followed closely the same percentages given for age, sex, color, marital status and date of the infection as was found in the syphilitic group.

Many of the rural counties reported no cases of syphilis or gonorrhea in either survey period which would seem to indicate farther that either the local physicians are not being consulted, that the infected patients are going elsewhere for treatment or else the cases are still not being reported.

It is only when complete reporting of every case of syphilis, gonorrhea and chancroid has been obtained that information will be available upon which a common sense program for their control can be formulated. Without doubt these are the most prevalent of the communicable diseases and must be attacked in a concerted effort if their spread is to be checked and the late manifestations prevented.

	Syphilis Cases 1st quarter	2nd quarter	Gonorrhea Cases 1st quarter	2nd quarter
New Cases Reported	1054	2287	641	1394
St. Louis				
Kansas City				
Buchanan County				
Jackson County				
Greene County				
Cole County				
St. Louis County				
Total above	906	1549	...	906

	Syphilis Cases 1st quarter	2nd quarter	Gonorrhea Cases 1st quarter	2nd quarter
109 Rural Counties	148	738	...	488
Sex unspecified	-50%	44%	64%	56%
Color unspecified	-66%	54%	68%	62%
Age unspecified	...	57%	...	67%
Marital Status unspecified	...	63%	...	84%
Stages unspecified	...	92%	...	89%

The reporting system in use in Missouri has been woefully inadequate and cumbrous. A new method is now in the process of development which will simplify the procedure and assist the physician in getting back into his office for treatment cases which have failed to return to him.



## OBITUARY

### C. F. BURKHALTER, M.D.

Dr. C. F. Burkhalter, Higbee, a graduate of Washington University School of Medicine, 1895, died at the Woodland Hospital, Moberly, on February 17, of pneumonia, aged 70 years.

Dr. Burkhalter was born in Coopersburg, Pennsylvania. His parents moved to St. Louis in 1875 and a year later to a farm near Wellsville where Dr. Burkhalter spent his boyhood. After completing his medical education he began practice at Vandalia and three years later moved to Higbee where he remained in active practice until a short time before his death. His fatal illness was contracted through exposure while making a call in the country.

He was a member of the Knights of Pythias, the Modern Woodmen, the Independent Order of Odd Fellows and of the Methodist Church. He was a member of the Randolph-Monroe County Medical Society.

He is survived by his widow, Mrs. Florence Stewart Burkhalter, four daughters, his mother, two brothers and eight grandchildren.

### CHARLES EDWARD JENKINS, M.D.

Dr. Charles E. Jenkins, Brookfield, a graduate of Rush Medical College, 1900, died at his home in Brookfield on January 29, aged 68 years.

Dr. Jenkins was born at Chillicothe, Illinois. He received his preliminary education at the Normal School at Lincoln, Nebraska. After completing his medical education he practiced for a time at Villesca, Louisiana, and in 1903 went to Brookfield where he remained in active practice until his death.

He served during the Spanish American War and during the World War with one year overseas. He became a major in the Reserve Corps.

Dr. Jenkins was a member of the American Legion, the A. F. & A. M. and the Shrine. He was active in the Linn County Medical Society and will be greatly missed by its members who enjoyed his fellowship and appreciated his counsel.

He is survived by his widow, Mrs. Hattie May Long Jenkins and a daughter.

### ABRAM MILLER, M.D.

The friends of Dr. Abram Miller, Kansas City, were shocked to learn of his death February 12 at his home. Dr. Miller had gone about his usual affairs that day, attended his office that afternoon, ate a hearty dinner that evening and was expecting guests. Shortly after dinner, however, he became ill, rapidly grew worse, and died at about 11:30 of coronary heart disease.

Dr. Miller was 63 years of age, having been born on March 18, 1875, in Kansas City, Missouri, on the ground where the Finance Building is now located. This was one of the finest old residential districts in the "quality hill" days. Dr. Miller attended the Lathrop Grade School at Eighth and Main Streets until the cyclone occurred, which blew the tower of the school in and killed thirty children and destroyed the school. This occurred just a few minutes after Dr. Miller, as a child, had left the room. He was in the fourth grade. He continued in the newly constructed Lathrop Grade Schools which is now the Lathrop Trade School. He attended this school when I. I. Camack was principal. He next went to Central High School where he graduated, and then went on a scholarship to Washington University in St. Louis for four years where he received his M.D. degree. From there he went back to Kansas City to start in practice. He immediately became a staff mem-

ber on the old St. Joseph Hospital staff and has been a staff member of St. Joseph Hospital until his death. He was also a member of the Menorah Hospital staff. He was given a chair as professor of materia medica in the old Kansas City Medical College until the University Medical College was established, and he held the same chair as professor of materia medica in that school until the University Medical College closed. He was first assistant to Dr. Binnie, and was anesthetist and first assistant to Dr. J. D. Griffith. Upon one occasion when Dr. Griffith operated upon Dr. Binnie, Dr. Miller was first assistant at this operation. Dr. Miller was one of the organizers and he was the vice-president of the Native Sons of Kansas City. This organization was one of his great pets and he took great pride in its activities.

Dr. Miller officed first in the Rialto Building, and remained there until 1907, when his father died. From that time on until 1914 he actively managed the affairs of his father, who was one of Kansas City's leading furniture dealers, and he continued to practice medicine conjointly with this activity. When the United States went into the World War in 1916, Dr. Miller served on the draft board.

Dr. Miller served on the staff of the Alfred Benjamin Dispensary for many years, was president of the Alfred Benjamin Dispensary one year and was a member of its staff until his death. Dr. Miller was one of the advisory board of the Tuberculosis Society.

His father was Mr. Bernard Miller, and his mother was Teresa Miller; both were born in Germany and came to Kansas City by stage from Emporia, Kansas. His father was a pioneer furniture dealer in Kansas City, and his first store was on the ground site of the old Gillis Opera House. Later he had a large furniture store at Eighth and Main.

Dr. Miller was never married. He lived with his sister, Mrs. Anna Miller Hutchason, at 1422 Central, where they have lived for 48 years. This sister and another sister, Mrs. Alfred Schulein, St. Louis, are the sole surviving relatives, except several nieces and nephews, of whom he was very fond, all of whom live out of Kansas City.—J. H. J. in the Jackson County Medical Society Weekly *Bulletin*.

## BOOKS FOR LEISURE MOMENTS

### TRADITION, TECHNOLOGY AND MEDICAL CARE

"Neither physicians nor the public have a case against the other. But both have a case against a system, because of its wastes and injustices. . . . It is a tribute to the profession and to the strength and vitality of its idealism that, thrust into a commercialized world, medicine has kept itself free of commercialism to the extent that it has. . . . The physician's problem is to secure that economic organization of medicine which will enable him to serve people effectively, which will permit him to be the sort of person he wants to be, and will yield him a suitable remuneration. . . ."

These quotations evidence the deep sympathy with which Mr. Louis S. Reed, one time member of the research staff of the Committee on the Cost of Medical Care, approaches the problem of the physician seeking a reasonable remuneration for his services and of the public at large, seeking adequate medical care at a cost it can afford to meet. He has made a thorough-going attempt in his latest book, "Health Insurance" (Harper and Brothers, New York), to gain a complete understanding of the many sided complexities of this pressing economic and social problem. Physicians as well as laymen will doubtless have different opinions as to the success which the author has achieved in meeting his objective of contributing to "a fuller under-

standing by the general public and the medical profession of the situation in medical care, and of each other's point of view." His painstaking effort is deserving of wide study, of deep thought, and finally in so far as the profession is concerned with whatever course of action seems best calculated to obstruct or modify or further the social reorganization which he espouses.

Reed draws frequent analogies between the educational system, between the control of the state over sanitation and communicable disease, between governmental activities in maternal health and child welfare and in the general field of medicine now accounting for one sixth of the cost of medical care, between the development of legislation governing unemployment and old age relief, between all of these expanding activities of government and the present and his projected system of medical practice. Whatever individual prediction we may hold in these matters we must admit the cogency of his reasoning and the essential fairness of his presentation.

Reed points out that the federal government subsidized care for the medically indigent a few years ago. He believes that its constantly expanding activities in the whole public health field have led it to be intimately concerned with the health of individual persons as compared with the broad community supervision which it exercised only a few years ago. He takes this as evidence of a further participation by government in the problem of medical care. For that matter, who could have foretold the entrance of government into every activity that affects the individual? Who could have anticipated a short decade ago that government would tax payrolls to provide unemployment insurance or that it would lend the average citizen the funds wherewith to purchase or repair his home? Reed calls attention to the increasing concern of government in those experiences that were formerly considered wholly personal matters. He does not attempt to pass on the wisdom of the social philosophy legislation that has brought all this about. He dismisses them as necessary outgrowths of the technology of the day.

The difficulties which medicine faces today Reed believes, arise in the altered technology of the whole art of healing. A few years ago hospitals were places where homeless people went to die. Today they are the nucleus about which the physician services his patients. They contain facilities for curing the sick as well as intricate machines of many kinds and expensive laboratories both indispensable to the diagnosis and treatment of the afflicted. An entirely extraneous technological change contributing to the increased dependence on hospitals arises in the altered mode of living today. Formerly families lived in large homes; a room could easily be set aside for the sole use of the ailing member. There were plenty of persons living at home who could lend a hand in his care; even neighbors could be depended upon to offer assistance. Today, crowded apartments preclude the possibility of providing the sick person with a room for his own use; there are few members of the family left at home who can be charged with his care. And the neighbors, thinks Reed, never know.

Reed is keenly aware of the tremendous strides taken by medical science in the last few years. He is aware of the ability of the practitioner and he is impressed both by his capacity and by his integrity. He deplors the limited income earned by the physician, an income which places him, despite his years of study, in the same economic class as factory hands and clerks. He seeks betterment of the social status of the physician. He would get for him that recognition to which his learning entitles him. He would reimburse him for charity work.

He is doubtful whether this can be done under the present system. Two thirds of the people earn less than

\$3,000 annually. This group, he writes, foregoes much needed medical care. The fees for that which they do require cannot be raised for illness mortgages family earnings in about 10 per cent of the population. It is for this group as well as for those who have no income that an extension of the present system is most vital. Reed thinks that only antiquated traditions which have survived from the day of the priest-physician have maintained the present system.

In seeking for an acceptable scheme of medical care Reed reviews a whole host of plans. He finds them wanting and is at pains to make clear the exact nature of their particular deficiencies. Fundamental to the whole problem is the ability of the patient to pay and the ability of the physician to earn. On the whole Reed has high regard for the honesty of the average practitioner but he suggests that in the pinch of economic necessity the practitioner, being human, may be subjected to temptations which warp his idealism. Voluntary insurance schemes, lodge schemes, company insurance schemes, contract practice, government insurance as now practiced in the European (and South American) countries, all these are lacking. Even the author's scheme is admittedly not perfect.

Reed suggests the wisdom of compulsory health insurance, paid for by deductions from wages plus contributions from employers plus governmental subsidy from general tax revenue, administered by physicians who retain their status as individual practitioners, regulated by a small number of salaried physician-supervisors paid by the state and supervised by a state commission with the cooperation of the medical society and the state health department.

"Health Insurance" can be unqualifiedly recommended for the study of each physician that he may the better orient himself to the changing technology of medicine and medical practice.

B. Y. G.

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Lida J. Usilton, Howard Hunter and R. A. Vonderlehr, Washington, D. C. (*Journal A. M. A.*, March 19, 1938), state that the health authorities of the state of Illinois and the city of Chicago requested the United States Public Health Service to cooperate with the Works Progress Administration to determine the number of persons with syphilis under treatment and observation by all authorized medical sources in Chicago. Every clinic and 99.6 per cent of the physicians in active practice cooperated in this undertaking. There are 14,350 patients with syphilis constantly under medical care in Chicago (44 per 10,000 of population). Syphilis is eight and five-tenths times more frequent in the negro than in the white population. Approximately 15,500 persons with syphilis seek treatment annually. Only 2,500 of the 15,500 are in the early stage. Of those who do seek treatment for syphilis in the early stages, only 23 per cent of the private patients and 52 per cent of the clinic patients receive the minimal effective therapy before they disappear from observation. There was an increase of 17 per cent in the total number of persons with early syphilis who sought treatment during the survey period over those constantly under observation and treatment. Fifty-two per cent of the persons who sought treatment for early syphilis during the survey period came to the private physician, in contrast with 26 per cent of the patients with early syphilis who were constantly under the care of private physicians. Fifty-nine per cent of those who acquire syphilis do so before the age of 30 years. Sixty-four per cent of clinic patients, as contrasted with 45 per cent of patients under the care of private physicians, acquire their infection before the age of 30. Of approximately 11,400 clinic patients with late or latent syphilis seen any time during the survey period, 72 per cent had had no prior treatment, and only 6 per cent had had the minimal prescribed therapy.



## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.  
Perry County Medical Society, December 4, 1937.  
Ste. Genevieve County Medical Society, December 14, 1937.  
Camden County Medical Society, January 7, 1938.  
Webster County Medical Society, January 7, 1938.  
Montgomery County Medical Society, January 14, 1938.  
Dent County Medical Society, January 21, 1938.  
Miller County Medical Society, February 8, 1938.  
Moniteau County Medical Society, March 11, 1938.

ASSOCIATE EDITORS: COUNCILORS OF THE  
TEN COUNCILOR DISTRICTS

#### FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR

##### Buchanan County Medical Society

The Buchanan County Medical Society was called to order at the Missouri Methodist Hospital at 8 p. m. February 2 by the president, Dr. G. T. Bloomer.

Dr. George Forman discussed the proposed Society for Mental Health. It was moved by Dr. J. M. Hughes and seconded by Dr. J. H. Ryan that the Society go on record as endorsing the proposed society. It was discussed by Drs. H. DeLamater and J. T. Stamey but inasmuch as there was not a quorum present the question was carried over to the next meeting.

Mr. William R. Nelson spoke on the proposed city and county bond issue for city and county relief.

Dr. W. T. Elam called attention to the fact that the Society was entitled to another delegate and alternate.

Dr. E. E. Wadlow presented the following proposed amendment to the By-Laws: "It is proposed that Chapter II, Section 2, of the By-Laws of the Buchanan County Medical Society shall be amended to read: 'There shall be an annual meeting of the Society held on the third Thursday of December each year,' instead of reading the 'third Wednesday.' The rest of the section to remain unchanged."

Dr. W. T. Stacy gave a paper on "A Four Year Study of Obstetrics in the General Hospital." Some of the important points made in Dr. Stacy's talk were: (1) A decrease in percentage of operative deliveries and cesarean sections performed, (2) there was one complication of pregnancy to every twenty-five mothers, (3) compli-

cated cases should have competent consultation before being subjected to operative delivery and (4) best results will be obtained from prenatal care, the study of the case and after consultation the selection of that type of delivery less hazardous to mother and baby. The paper was discussed by Dr. E. E. Wadlow and closed by Dr. Stacy.

#### Meeting of March 2

The Society met at the Missouri Methodist Hospital at 8 p. m. March 2 with Dr. G. T. Bloomer presiding.

Dr. H. Winnett Orr, Lincoln, Nebraska, presented a paper on "Prevention and Control of Infection in Injuries to Bones and Joints" in a scholarly manner. He stressed the accurate reposition of fragments. He explained his method which emphasizes a primary thorough cleaning of the wound and alignment of fragments with as little postoperative interference as possible. Recognized as an international authority on this subject and possessing the rare ability to present a technical and specialized subject with simplicity and clarity, Dr. Orr's paper was thoroughly enjoyed and will long be remembered by the members of the Society. The paper was discussed by Drs. G. T. Bloomer, J. Kulowski, James O'Donoghue, Gregg Thompson, closed by Dr. Orr.

An acknowledgment was read from Mr. W. Ed. Jameison, chairman of the Eleemosynary Board, of the receipt of the resolution adopted by the Society with reference to the Cancer Clinic to be established at State Hospital No. 2. A letter was read from Dr. Ellis Fischel, St. Louis, announcing the annual campaign for enrollment in the Women's Field Army for the Control of Cancer; he also expressed his appreciation for the attitude of the Society toward the establishment of the Cancer Clinic at the State Hospital.

After discussion by Drs. E. E. Wadlow, Orr Mullinax and E. M. Shores, the Society endorsed the establishment of a Society for Mental Health in Buchanan County.

It was moved by Dr. A. E. Burgher and seconded by Dr. Cabray Wortley that the amendment to the By-Laws proposed by Dr. Wadlow at the February meeting be adopted and the motion carried.

Dr. A. H. Panettiere was elected to provisional membership.

Dr. W. T. Elam was elected delegate to the Annual Session. It was decided that if Dr. Elam cannot go the president should appoint the alternate.

The Society voted to donate \$50 to the St. Joseph Clinical Society.

Letters expressing the good will and interest of the Society in their behalf were directed to be sent to Drs. W. C. Proud and Daniel Morton.

O. EARL WHITSELL, M.D., Secretary.

#### SECOND COUNCILOR DISTRICT

H. B. GOODRICH, HANNIBAL, COUNCILOR

##### Lincoln County Medical Society

The Lincoln County Medical Society met March 3.

The following officers were elected: President, Dr. E. A. Hicks, Troy; vice president, Dr. J. G. Woeger, Whiteside; secretary-treasurer, Dr. H. S. Harris, Troy; delegate, Dr. Joseph C. Creech, Troy, and alternate, Dr. H. S. Harris, Troy.

H. S. HARRIS, M.D., Secretary.

#### FIFTH COUNCILOR DISTRICT

M. PINSON NEAL, COLUMBIA, COUNCILOR

##### Howard County Medical Society

The Howard County Medical Society met at the Lee Hospital, Fayette, March 10, with Dr. W. R. Hawkins,

Glasgow, presiding. All active members were present.

Dr. D. L. Coffman, Fayette, was elected to membership.

The following officers were elected: President, Dr. W. B. Kitchen, Glasgow; vice president, Dr. W. M. Dickerson, Armstrong; secretary-treasurer, Dr. Wm. J. Shaw, Fayette; delegate, Dr. J. W. Gardner, Glasgow, and alternate, Dr. W. R. Hawkins, Glasgow.

WM. J. SHAW, M.D., Secretary.

### Moniteau County Medical Society

The Moniteau County Medical Society met December 9, 1937.

The following officers were elected: President, Dr. L. L. Latham, California; vice president, Dr. J. B. Norman, Tipton; secretary-treasurer, Dr. E. A. Kibbe, California.

E. A. KIBBE, M.D., Secretary.

### Cole County Medical Society

The Cole County Medical Society met February 21, 1938.

Dr. Charles F. Sherwin and Dr. A. N. Arenson, St. Louis, were guests of the Society. In the afternoon both addressed a large audience on the topic "What the Public Should Know About Cancer." These lectures were broadcast over Station KWOS.

At 6:30 p. m. a dinner was served by the Sisters at the St. Mary's Hospital to all visiting doctors. Immediately after dinner Drs. Sherwin and Arenson spoke to physicians.

Dr. Sherwin spoke on "Cancer of the Mouth, Esophagus and Stomach from the Standpoint of Surgery," and Dr. Arenson spoke on "The Treatment of Cancer by Radiology."

The Society wish to thank these doctors for their splendid addresses and the Committee on Cancer for furnishing these speakers.

Committees for arrangements for the Annual Session were appointed.

JAMES A. HILL, M.D., Secretary.

### SIXTH COUNCILOR DISTRICT

#### A. J. CAMPBELL, SEDALIA, COUNCILOR

#### Vernon-Cedar County Medical Society

The Vernon-Cedar County Medical Society met in the library of the Nevada Hospital at 7:30 p. m. February 17.

Communications to the Society were read and discussed.

Officers were elected as follow: President-elect, Dr. C. B. Davis, Walker; secretary-treasurer, Dr. R. W. Pearse, Jr., Nevada; member board of censors, Dr. R. B. Wray, Nevada; member committee on public policy, Dr. R. H. Potter, Nevada. Delegates, Dr. J. W. Dawson, Eldorado Springs (Cedar County), Dr. C. B. Davis, Walker (Vernon County); alternates, Dr. H. A. Simrell, Stockton (Cedar County), Dr. T. B. Todd, Nevada (Vernon County). Dr. John S. Newlon, Nevada, was installed as president.

Following a brief discussion of local medical economics the meeting adjourned.

R. W. PEARSE, JR., M.D., Secretary.

### Lafayette County Medical Society

The Lafayette County Medical Society held its regular monthly meeting in Odessa, on February 22.

Routine matters of business were taken care of.

Dr. E. M. Moore, Jr., Higginsville, gave a paper on "The Emergency Treatment of Traumatic Wounds of

the Extremities." Dr. Moore's talk was illustrated with motion pictures.

Dr. W. A. Braecklein, Higginsville, was the guest of honor at a dinner given by the Chamber of Commerce of Higginsville in commemoration of his first fifty years in the practice of medicine.

E. W. WALLACE, M.D., Secretary.

### EIGHTH COUNCILOR DISTRICT

#### H. L. KERR, CRANE, COUNCILOR

#### Greene County Medical Society

The Woman's Auxiliary to the Greene County Medical Society were guests of the Society at a banquet and installation meeting at the Kentwood Arms Hotel, Springfield, on January 28.

Dr. W. S. Sewell, retiring president, called the meeting to order. He briefly summarized the activities of the Society for the last year and expressed his appreciation and thanks for the cooperation given him by members of the Society. Dr. Sewell then presented Dr. A. W. Gifford, president for 1938, to the Society.

Dr. Gifford spoke briefly in acceptance of the office as president. He presented the vice president, Dr. C. E. Feller; treasurer, Dr. R. Ned White, and secretary, Dr. J. L. Johnston.

Dr. E. H. Hashinger, professor of medicine at the University of Kansas, was presented as the speaker of the evening, by Dr. Urban J. Busiek. Dr. Hashinger's subject was "The Psychological and Sociological Manifestations of Endocrine Disease." He showed several lantern slides taken of patients before and after treatment illustrating the different endocrine diseases. Dr. Hashinger ably presented his subject so as to be of interest to both professional and nonprofessional listeners.

Dr. Gifford expressed the appreciation and thanks in behalf of the seventy-two members and guests to Dr. Hashinger for his most interesting and instructive address.

J. L. JOHNSTON, M.D., Secretary.

### Barry County Medical Society

The Barry County Medical Society met February 3 at Monett with Dr. S. W. Chandler, Cassville, presiding.

The following officers were elected: President, Dr. Ernest Mitchell, Monett; vice president, Dr. George W. Newman, Cassville; secretary, Dr. William M. West, Monett; delegate, Dr. J. M. Russell, Monett; alternate, Dr. Frank T. Kerr, Monett.

The application for membership of Dr. F. J. Moennighoff, who recently located in Monett, was voted on favorably.

Plans were discussed for arranging several social and scientific sessions during the coming year. On motion the president appointed the following members to serve as a committee on arrangements for these functions: Dr. George W. Newman, Cassville; Dr. Lewis H. Ferguson, Monett, and Dr. F. J. Moennighoff, Monett.

WILLIAM M. WEST, M.D., Secretary.

### TENTH COUNCILOR DISTRICT

#### A. H. MARSHALL, CHARLESTON, COUNCILOR

#### Perry County Medical Society

The Perry County Medical Society met at the office of Dr. B. T. Koon, Perryville, February 10, Dr. Koon presiding.

The following officers were elected: President, Dr. J. J. Bredall, Perryville; secretary, Dr. O. A. Carron, Perryville; delegate, Dr. B. T. Koon, Perryville; alternate, Dr. O. A. Carron, Perryville.

O. A. CARRON, M.D., Secretary.



## MISSOURI STATE MEDICAL ASSOCIATION

81st Annual Meeting, House Chamber, Capitol Building  
Jefferson City

The 81st Annual Meeting of the Association convenes in the House Chamber, Capitol Building, Jefferson City, Monday, Tuesday and Wednesday, May 2, 3 and 4.

## HOUSE OF DELEGATES

House Chamber, Capitol Building

First Meeting—Monday, May 2, 1938—9:30 a. m.

## Order of Business

Report of Committee on Credentials.  
Reading of Minutes of Previous Meeting.  
Address of Welcome: Governor Lloyd C. Stark.  
Reading of President's Message and Recommendations.  
Appointment of Reference Committees:  
Committee on Amendments to the Constitution and By-Laws.  
Committee on Resolutions.  
Committee on Miscellaneous Affairs.  
Committee on Medical Education and Public Welfare.  
Report of General Committee on Arrangements: W. H. Breuer, St. James, Chairman.  
Report of Local Committee on Arrangements: Irl B. Krause, Jefferson City, Chairman.  
Report of the Secretary.  
Report of the Treasurer.  
Report of the Committee on Scientific Work: E. J. Goodwin, St. Louis, Chairman.  
Report of the Committee on Postgraduate Course: C. H. Neilson, St. Louis, Chairman.  
Report of the Committee on Publication: Walter Baumgarten, St. Louis, Chairman.  
Report of the Committee on Public Policy: J. F. Harrison, Mexico, Chairman.  
Report of the Committee on Defense: Charles E. Hyndman, St. Louis, Chairman.  
Report of the Committee on Medical Education and Hospitals: L. W. Dean, St. Louis, Chairman.  
Report of the Committee on Cancer: Ellis Fischel, St. Louis, Chairman.  
Report of the Committee on Medical Economics: Carl F. Vohs, St. Louis, Chairman.  
Report of the Committee on Mental Health: G. Wilse Robinson, Sr., Kansas City, Chairman.  
Report of the Committee on Maternal Welfare: Ralph R. Wilson, Kansas City, Chairman.  
Report of the Committee on Health and Public Instruction (McAlester Foundation): A. R. McComas, Sturgeon, Chairman.  
Report of the Committee on Constitution and By-Laws: Floyd H. Spencer, St. Joseph, Chairman.  
Report of Special Committees:  
Committee on Fractures: M. L. Klinefelter, St. Louis, Chairman.  
Committee on Physical Therapy: A. J. Kotkis, St. Louis, Chairman.  
Committee on Study of Medical Practice Act: W. H. Breuer, St. James, Chairman.  
Committee on Medical-Legal Affairs: James R. McVay, Kansas City, Chairman.  
Committee on Study of Control of Syphilis: G. V. Stryker, St. Louis, Chairman.  
Committee on Missouri University School of Medicine: E. Lee Miller, Kansas City, Chairman.  
Appointment of Committee on Nominations.  
Unfinished business.

*Recess Until 4:00 p. m.*

Report of the Council: M. Pinson Neal, Columbia, Chairman.  
Report of Reference Committees:  
Committee on Amendments to the Constitution and By-Laws.  
Committee on Resolutions.  
Committee on Miscellaneous Affairs.  
Committee on Medical Education and Public Welfare.  
New Business (Resolutions, Memorials, etc.).  
Selection of Place of Next Session.

Second Meeting—Wednesday, May 4, 1938—3:00 p. m.

County Health Organization Work.

Roll Call.

Reading of Minutes.

Election of Officers:

Election of President-Elect.

Report of Committee on Nominations.

Installation of President.

Nominations for Standing Committees by President and Confirmation by House of Delegates.

Unfinished Business.

GENERAL MEETING

Monday, May 2, 1938—1:15 p. m.—House Chamber,  
Capitol Building

Undulant Fever .....Harold G. Newman, M.D., St. Louis

The Clinical Significance of Gastric Motility in the Human Subject .....  
.....J. H. J. Upham, M.D., Columbus, Ohio, President, American  
Medical Association, Dean, Ohio State University College of Medicine

The Rationale of Splenectomy in Certain Anemias .....George M. Curtis,  
M.D., Columbus, Ohio, Research Professor of Surgery, Ohio State Uni-  
versity College of Medicine

The Effect of Therapy Upon Insulin Requirement in Diabetes .....  
.....B. Y. Glassberg, M.D., St. Louis

At 4 p. m. the General Meeting will adjourn and the House of Delegates will immediately go into session.

MATERNAL WELFARE COMMITTEE

Monday, May 2, 1938—6:00 p. m.—Missouri Hotel  
Dinner Meeting

Presentation of Reports of Maternal Deaths During 1938 .....  
Members of the Missouri State Medical Association

Critique of Submitted Maternal Death Reports .....  
.....Palmer Findley, M.D., Omaha, Nebraska

All members are invited to attend this meeting and participate in the discussion. Tickets are on sale at the registration desk.

GENERAL MEETING

Tuesday, May 3, 1938—8:30 a. m.—House Chamber,  
Capitol Building

Address of the President .....Dudley S. Conley, M.D., Columbia

Address of the President-Elect .....B. W. Hays, M.D., Jackson

Myasthenia Gravis: Methods of Treatment With Report of a Case .....  
.....Anthony B. Day, M.D., St. Louis

Country Obstetrics: A Review of 600 Cases .....Wm. J. Shaw, M.D., Fayette

Puerperal Sepsis .....Palmer Findley, M.D., Omaha, Nebraska

The Third Stage of Labor: With Special Reference to Postpartum Hemorrhage, Placenta Accreta and Inversion of the Uterus .....  
.....E. Lee Dorsett, M.D., St. Louis

Tuberculosis Complicating Pregnancy: Treatment and Report of Cases  
.....Andrew C. Henske, M.D., St. Louis

Bilateral Pneumothorax in the Treatment of Pulmonary Tuberculosis  
.....John B. Devine, M.D., St. Louis



## GENERAL MEETING

Tuesday, May 3, 1938—1:15 p. m.—House Chamber,  
Capitol Building

- Fractures of the Os Calcis .....Duncan C. McKeever, M.D., Kansas City  
Fractures of Both Bones of the Leg .....Frederick A. Jostes, M.D., St. Louis  
Intermenstrual Pain .....Daniel L. Sexton, M.D., St. Louis  
Obesity and Its Treatment .....August A. Werner, M.D., St. Louis  
The Causes and Complications of Pneumonia .....  
.....M. Pinson Neal, M.D., Columbia  
The Diastase Test as an Aid in the Diagnosis of Perforated Peptic Ulcer  
.....J. G. Probststein, M.D., St. Louis  
Indications for Surgery of the Stomach .....J. H. Hershey, M.D., St. Louis  
Radical Surgical Treatment of Extensive Malignant Lesions of the  
Stomach .....Claude J. Hunt, M.D., Kansas City

## GENERAL MEETING

Wednesday, May 4, 1938—8:30 a. m.—House Chamber,  
Capitol Building

- Some Recent Advances in Ophthalmology .....  
.....C. Souter Smith, M.D., Springfield  
The Eyes in Congenital Syphilis .....John McLeod, M.D., Kansas City  
The Neurotic Factor in Disease .....Robert E. Britt, M.D., St. Louis  
Early Eruptive Syphilis .....Thomas B. Hall, M.D., Kansas City  
Prophylactic Treatment of Staphylococcus Cellulitis of the Face .....  
.....Paul F. Stookey, M.D., and Louis Scarpellino, M.D., Kansas City  
The Effect of Work Upon the Heart .....Dan G. Stine, M.D., Columbia  
Ependymoma: A Case Study .....  
.....Harry M. Gilkey, M.D., and Walter E. Owen, M.D., Kansas City  
Allergy Due to Molds .....O. R. Withers, M.D., Kansas City  
Missouri State Cancer Hospital: Its Relationship to Medical Practice and  
Proposed Method of Operating .....Paul F. Cole, M.D., Springfield

## GENERAL MEETING

Wednesday, May 4, 1938—1:15 p. m.—House Chamber,  
Capitol Building

- Traumatic Psychosis .....E. T. Gibson, M.D., Kansas City  
Carotid Denervation in Epilepsy .....Radford F. Pittam, M.D., Kansas City  
Factors in Determining the Management of Prostatic Enlargement .....  
.....A. Lloyd Stockwell, M.D., Kansas City  
Diseases of the Testicle .....Otto J. Wilhelmi, M.D., St. Louis

At 3:00 p. m. the General Meeting will adjourn and the House of Delegates  
will immediately go into session.

- Medical Participation in Public Health Programs .....  
.....T. R. Meyer, M.D., Clayton

All members of the General Assembly are invited to participate in the dis-  
cussion of this public health presentation.

## COMMERCIAL EXHIBITS

### Third Floor Rotunda Hall, Capitol Building

**THE W. E. ISLE COMPANY, 1121 GRAND AVE., KANSAS CITY. BOOTH 1.**

The W. E. Isle Company is exhibiting a comprehensive line of prosthetic and orthopedic appliances, featuring Isle Superior Limbs. The Isle Company offers a specialized service for the patient who requires an artificial limb, brace or surgical corset. Remember Isle's for artificial limbs, spinal and leg braces, elevations, Campbell splints, Bradford frames, Camp surgical supports for men and women, brassieres, trusses, elastic hosiery, crutches and canes. The representatives are T. W. Smith and Kenneth McConnell.

**PHILIP MORRIS & CO., LTD., INC., 119 FIFTH AVE., NEW YORK. BOOTH 2.**

Philip Morris & Co. is demonstrating the method by which it was found that Philip Morris cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches and problems on the physiological effects of smoking.

**PEVELY DAIRY COMPANY, 1001 S. GRAND BLVD., ST. LOUIS. BOOTH 3.**

Evaporated milk plays an important role in human nutrition. Pediatricians find it well adapted for infant feeding. It is valuable in the treatment of gastro-intestinal disturbances. Evaporated milk is always uniform in composition, easy to prepare and is a low cost product. Pevely Evaporated Milk is manufactured under strict laboratory control and carries the seal of acceptance of the American Medical Association. The Pevely booth is demonstrating graphically the various steps in the manufacture of evaporated milk.

**THE C. V. MOSBY COMPANY, 3523 PINE BLVD., ST. LOUIS. BOOTH 4.**

The C. V. Mosby Company is displaying new editions of Crossen's "Operative Gynecology"; Key and Conwell's "Fractures, Dislocations and Sprains"; Clendenning's "Methods of Treatment," and Macleod's "Physiology in Modern Medicine," besides many new works such as Horsley Bigger's "Operative Surgery"; Sadler's "Theory and Practice of Psychiatry," and Don Sutton's "Physical Diagnosis."

**LEDERLE LABORATORIES, 305 PROFESSIONAL BLDG., KANSAS CITY. BOOTH 5.**

Serums and pharmaceuticals.

**HAMILTON-SCHMIDT SURGICAL COMPANY, 215 N. 10TH ST., ST. LOUIS. BOOTH 6.**

The Hamilton-Schmidt Surgical Company is demonstrating new surgical instruments as well as the Burdick Short-Wave and other physiotherapy equipment. The exhibit will be in charge of C. S. Bauman and Frank Ritzen.

**LEA & FEBIGER, 600 S. WASHINGTON SQUARE, PHILADELPHIA, PA. BOOTH 8.**

Medical books.

**W. A. ROSENTHAL X-RAY COMPANY, 410 PROFESSIONAL BLDG., KANSAS CITY. BOOTH 9.**

W. A. Rosenthal X-Ray Company of Kansas City and the Dick X-Ray Company of St. Louis, exclusive distributors of Westinghouse X ray equipment, are featuring the 30 m. a. Diadex portable X-ray unit which combines many vital features in an efficient, powerful, yet low priced diagnostic X ray unit. Physicians should not fail to inspect this apparatus. Robert F. Anderson, in charge of the exhibit, will gladly demonstrate the Diadex to visiting members and guests.

**LACLEDE INSURANCE AGENCY CO., 200 N. BROADWAY, ST. LOUIS. BOOTH 10.**

Insurance.

**J. B. LIPPINCOTT CO., EAST WASHINGTON SQUARE, PHILADELPHIA, PA. BOOTH 11.**

Medical books.

**THE COCA-COLA COMPANY, ATLANTA, GEORGIA, AND MOERSCHER PRODUCTS COMPANY, JEFFERSON CITY. BOOTH 13.**

The Coca-Cola Company is serving Coca-Cola complimentary to members attending the Session.

**MEAD JOHNSON & COMPANY, EVANSVILLE, IND. BOOTH 14.**

Mead Johnson & Company are distributing an unusually fine souvenir item this year. It is not only beautiful but extraordinary because it contains no advertising. Ask for your copy of "Parergon." The complete display of Mead products includes two new ones.

**JONES METABOLISM EQUIPMENT CO., 1870 OGDEN AVE., CHICAGO. BOOTH 15.**

The Jones Metabolism Equipment Company is featuring as their display the Jones Motor Basal metabolism apparatus. A special feature of this unit is that it contains no water and requires no calculation in the determination of the basal metabolic rate.

**HORLICK'S MALTED MILK CORPORATION, RACINE, WIS. BOOTH 16.**

Nourishing, digestible, appetizing—these are three outstanding qualities for which Horlick's is famous, either the powdered or tablet form. You will be interested in the many dietary uses, from infant feeding to old age. Note especially the convenience of the tablets for interval feeding in ulcer diets.

**A. S. ALOE COMPANY, 1819 OLIVE ST., ST. LOUIS. BOOTH 17.**

Surgical supplies and instruments.

**THE MEDICAL PROTECTIVE COMPANY, WHEATON, ILL. BOOTH 18.**

The Medical Protective Company's representative, thoroughly trained in professional liability underwriting, invites you to visit this booth. He is entirely familiar with the principles of the reciprocal rights and duties of a doctor and patient and with the circumstances peculiar to that relationship. He will be glad to explain how his company meets the exacting requirements of adequate liability protection, which are peculiar to the professional liability field.



## WOMAN'S AUXILIARY

### WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

16th Annual Meeting, San Francisco, 1938

President, Mrs. Augustus Kech, Altoona, Pennsylvania.

President-Elect, Mrs. Charles C. Tomlinson, Omaha, Nebraska.

### WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

14th Annual Meeting, Jefferson City, 1938

President, Mrs. Charles H. Werner, St. Joseph.

President-Elect, Mrs. Herbert L. Mantz, Kansas City.

Nothing was left undone by the Jackson County Auxiliary to make the visit of the National President, Mrs. Augustus S. Kech, one long to be remembered with keenest pleasure. Twenty-four board members and several guests attended the board meeting at the home of Mrs. Herbert L. Mantz, Kansas City. Mrs. C. H. Werner, St. Joseph, state president, gave a brief review of the year's accomplishments. Mrs. Mantz, essay chairman, reported on the essay contest and handed seventeen essays to the president for final judging. Mrs. W. H. Goodson, Liberty, asked that all material for the *Quarterly Bulletin* reach her by March 25 as it is hoped to issue the *Bulletin* by April 1. Mrs. Herman S. Gove, Jefferson City, convention chairman for the state meeting, told of some of the plans including a tea at the newly decorated Governor's mansion and a tour of the Capitol with a talk on the Benton murals. Mrs. Kech discussed plans for the national convention in San Francisco and urged a good attendance and making early hotel reservations. The meeting then adjourned and the board members were taken in cars provided by the Jackson County members to the home of Mrs. Richard Sutton where a delicious luncheon was served by the Jackson County Auxiliary. About 150 were present.

After luncheon, Mrs. Marvin Bills, Kansas City, presided at a short business session of the Jackson County Auxiliary. Two hundred seventy-seven subscriptions to *Hygeia* had been secured by the Auxiliary. Mrs. Hugh Miller, Kansas City, told of the interest in the essay contest. After some music Mrs. Kech, a dynamic speaker, intensely informed and interested in Auxiliary work, talked for more than an hour on the activities of some of the thirty states she has visited this year. She told particularly of the legislative and benevolent work of her own state, Pennsylvania. She told of "The Diary of a Doctor's Wife" which has recently come into her possession and which she intends to give to the National Auxiliary to be published. The diary, started in 1810 and continued until after the Civil War, showed interesting revelations of the viewpoints of the day and the quotations read showed that this doctor's wife of long ago had much in common with the women of today.

Mrs. Werner asks that all state reports and expense accounts, county president reports and per capita dues be sent in promptly so that she may complete her report and the treasurer's books may be audited. Auxiliaries which elect new officers before the state convention should send lists of officers to Mrs. Werner.

Since the state convention is to be held in such a central location it is hoped that each auxiliary will be well

represented and that as many as possible will attend the Bring-Your-Husband Dinner on Tuesday evening at the Missouri Hotel, plates to be \$1.25. The full program will appear in the April *Bulletin*.

The Buchanan County Auxiliary met on March 9 at the new home of Mrs. Harold Ryan. Reports of the Kansas City meeting were given by Madames W. H. Minton, J. F. Owens, H. DeLamater and C. H. Werner. Two piano solos were played by the 9 year old daughter of Dr. and Mrs. E. M. Shorcs. Dr. Orr Mullinax, St. Joseph, talked on "Mental Hygiene."

## BOOK REVIEW

**OPERATIVE GYNECOLOGY.** By Harry Sturgeon Crossen, M.D., Professor Emeritus of Clinical Gynecology, Washington University School of Medicine; Gynecologist to the Barnes Hospital, St. Louis Maternity Hospital and St. Luke's Hospital; Consulting Gynecologist to De Paul Hospital and to the Jewish Hospital, and Robert James Crossen, M.D., Assistant Professor of Clinical Gynecology and Obstetrics, Washington University School of Medicine; Assistant Gynecologist and Obstetrician to the Barnes Hospital and the St. Louis Maternity Hospital; Gynecologist to St. Luke's Hospital and to De Paul Hospital. Fifth edition, entirely revised and reset. Twelve hundred sixty-four illustrations including three color plates. St. Louis: The C. V. Mosby Company. 1938. Price \$12.50.

The author gives us a gynecological surgery which seems to cover completely the practical aspects of female surgery. Two hundred new illustrations have been used in addition to the excellent ones which are found in the previous edition of seven years ago. Not only is the operative technic given in excellent detail but particular stress is laid on the selection of the most suitable operation for the various conditions that may present themselves. This is handled par excellent especially in the management of bleeding myoma. The author takes up the therapy of carcinoma of the cervix in great detail and particularly emphasizes that radiation is superior to operative procedures. The present day concept for treatment of malignancy of the body of the uterus is pre-operative radiation and roentgen ray therapy followed by surgery if operable. Both clinical and pathological typing of carcinoma of the cervix, ovary and vulva are well discussed and should prove of definite prognostic value. Crossen presents his own clinical classification of carcinoma of the body of the uterus and this should help considerably in determining the future prognosis and management of these cases. The author is not biased surgically and gives roentgen ray and radiation treatment its proper due. Throughout the book operative technic is clearly illustrated. The chapter on cancer of the vulva is a classical handling of this subject and the author quotes Taussig freely. Intestinal and rectal surgery and management of hernia, which may prove of interest to the gynecologist, are also included in the text. Newer procedures such as Sovak's technic for operative correction of sterility, the double Basset's inguinal adenectomy for vulvar malignancy are given in great detail. Resection of internal pudic nerve, presacral sympathectomy, sub-arachnoid injection of alcohol, urtero-ureteral anastomosis and other newer methods are adequately discussed.

In resumé this book should be received well and is a splendid addition to the advance of gynecological surgery.

H. B. L.

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### DIAGNOSIS AND TREATMENT OF HYPERTROPHIC ARTHRITIS

J. ALBERT KEY, M.D.,

HERMAN J. ROSENFELD, M.D.

AND

O. E. TJOFLAT, M.D.

ST. LOUIS

Hypertrophic arthritis is also called degenerative, senile or metabolic arthritis, osteo-arthritis or arthritis deformans. Each of these terms suggests some characteristic of the disease. It is a condition which begins insidiously in adults, usually in or after middle life; the anatomical changes in the joints may progress over a period of years without giving rise to any signs or symptoms which are noticed by the victim. It has been demonstrated by postmortem studies that the joints of almost 100 per cent of individuals over 50 years of age exhibit degenerative changes in the articular cartilage which are recognized by the pathologist as being characteristic of hypertrophic arthritis. It is also true that routine roentgrams of the cervical and lumbar spines of individuals more than 50 years of age will, in a large percentage, disclose changes which the roentgenologist classifies as hypertrophic arthritis. Yet many of these individuals have had no rheumatic symptoms and would be amazed and not a little concerned if told they had arthritis of any sort.

This is because most laymen associate the term arthritis with a painful, deforming, crippling disease which tends to progress relentlessly in spite of what they believe to be the most expert medical care but which, in a large percentage of cases, is rendered by charlatans who blatantly and volubly offer a panacea for all forms of rheumatism. Most adults know of some unfortunate arthritic derelict who has flitted from one quack to another in an expensive but futile search for a panacea.

What the average layman does not know but should know is that the term arthritis means inflammation in a joint and is loosely applied to a number of conditions, the great majority of which

tend to be relatively innocuous and self-limited. He should also know that, while the medical profession frankly admits that the cause of most cases of chronic arthritis is not known and that it has no panacea to offer for the treatment of the disease, still it has been demonstrated that a careful examination followed by thoughtful medical management is definitely beneficial to the patient with any form of arthritis. This is because during the examination other conditions, either contributory or unrelated to the arthritis but detrimental to the health of the patient, may be discovered and measures taken for their alleviation; and also because, even though we cannot promise the patient with the severe crippling form of atrophic arthritis a cure, we can by intelligent guidance give him the best possible chance to get well with a minimal amount of crippling. Minot, in a ten year check up, has demonstrated that a group of such patients who persisted under good medical supervision was at least twice as well off as a similar group who had either abandoned all treatment or had patronized first one form of quackery and then another. Finally, the intelligent physician can usually tell the patient what type of arthritis he has and can assure him, if it is hypertrophic arthritis, that he is not headed for chronic invalidism in a wheel chair but that a great deal can be done to alleviate his present discomfort and shorten the duration of his symptoms.

The average layman cannot be blamed for knowing little about these things when a large percentage of our own profession almost boastfully proclaims that no one knows anything about rheumatism and that there is nothing to do for it. We do know a great deal about the various forms of rheumatism and our knowledge is being constantly enlarged by thoughtful students of the disease. The same physician does not know the cause of cancer and cannot offer a specific cure for tuberculosis; yet he would consider a patient with cancer or consumption a fool if he did not seek and follow competent medical advice. We believe that the results which we obtain in the treatment of various forms of arthritis compare favorably with those which we obtain in the treatment of cancer and tuberculosis. The difference is that our successes take their recovery as a matter of course while

From the Washington University School of Medicine, Department of Surgery and the Arthritis Clinic.



our failures live on and on to advertise our impotence.

The diagnosis of chronic arthritis is not, as a rule, difficult because an adult patient who complains of pain, stiffness and disability in one or more joints, in whom the disease began insidiously and has progressed slowly, may be assumed to be suffering from chronic arthritis until it has been proved to the contrary. If he has chronic arthritis it is, in most instances, either the atrophic or the hypertrophic type. The latter tends to affect individuals, usually of the heavy type in or after middle life, and favors the terminal joints of the fingers, the knees, the spine or the shoulders in the order mentioned. The hypertrophic lesions of the terminal joints of the fingers are called Heberden's nodes and are pathognomonic of the disease, but they are by no means present in every case. In some patients these nodes are the patient's only complaint and they may be tender or sensitive or ache, especially in damp weather. In others the nodes appear insidiously and the patient seeks advice because they are unsightly.

In many overweight patients pain and stiffness in the weight bearing joints such as the knees and the back are the first complaints, while others complain of a stiff and painful shoulder or ankle. In the back the pain and the clinical picture may simulate a chronic back strain and with lumbosacral involvement the pain may radiate in the distribution of the sciatic nerve. Occasionally patients complain of grating or cracking in one or more joints but do not complain of pain. Periarticular swelling and even intra-articular hydrops may occur. This is usually due to a traumatic synovitis or a traumatic irritation of the periarticular tissue. However, most patients with hypertrophic arthritis seek medical advice because of pain and disability.

The pain is often aggravated by inclement weather and many of these patients are human barometers. In some the joints are more stiff in the morning; in others they are stiff and painful when exposed to cold. A particularly characteristic story is that after sitting for an hour or so, as in a theater, the joints become very stiff and loosen up after walking a short distance.

If the patient is in or beyond middle life it is usually possible to make a fairly accurate diagnosis from the history alone and in our physical examination we first determine whether or not our surmise that the patient is suffering from hypertrophic arthritis is correct and then attempt to rule out other conditions such as other forms of arthritis or neoplasms which may account for the symptoms, always remembering that even though the patient has hypertrophic arthritis this may not be the cause of his symptoms. We routinely examine the hands, feet, knees, shoulders and spine, paying particular attention to the regions which are painful.

The firm nodular swellings on the bones adjacent to the terminal interphalangeal joints in the hands are characteristic and if present and not due to an

old injury are sufficient for the diagnosis. As a rule, these Heberden's nodes are not tender but they may be red and tender; occasionally one finds such a node surmounted by a small cyst. Late in the disease the proximal joints of the fingers, or even the knuckle joints, may be involved, and especially the metacarpophalangeal joint of the thumb is apt to be affected. It is to be noted that the enlargements of the joints are nodular and that the deformities and limitations of movement, if present, are due to erosion of articular cartilage combined with marginal overgrowth of cartilage and bone. It is also to be noted that there is no muscle atrophy and that the grip is firm as contrasted with the weak, flinching handshake characteristic of atrophic arthritis.

There is apt to be a general stiffness and sensitivity of the midtarsal region in the feet or the symptoms may be limited to the metatarsophalangeal joint of the great toe which exhibits enlargement of the bones, limitation of movement and pain when the movement is forced.

In the knees there is usually a variable amount of crepitus on movement with pain when either extension or flexion is forced. On palpation excess fluid may be present in the joint and there may be tenderness, especially over the mesial side of the joint line and down over the tibia for a variable distance. In thin patients the marginal overgrowths of cartilage and bone may be palpable.

The shoulders may exhibit crepitus and limitation of movement or the arthritis may involve chiefly the acromioclavicular joints. However, the usual stiff and painful shoulder in the patient with hypertrophic arthritis is due to a bursitis or periarthritis and the symptoms do not arise in the joint.

The hypertrophic spine exhibits a variable amount of limitation of movement and pain on movement and there may be tenderness over the spinous processes or over the muscles on either side.

If there is doubt as to the diagnosis, a roentgram may show the characteristic narrowing of the joint space with sharpening of the articular margins or marginal overgrowth of bone. It is to be noted, however, that the changes visible in the roentgram occur relatively late in the disease and that a negative roentgram does not rule out hypertrophic arthritis in a given joint. If one suspects atrophic arthritis or a mixed arthritis the sedimentation rate of the red blood corpuscles should be determined, as this tends to be accelerated in atrophic arthritis and tends to be normal in hypertrophic arthritis. Other laboratory tests are of no help in the diagnosis of the arthritis but, as will be mentioned later, certain examinations, especially the blood cholesterol value, the glucose tolerance curve and the basal metabolic rate, are of considerable value in planning the treatment of a given patient.

Having determined that the patient has hypertrophic arthritis, we attempt to classify this patient into one of the groups of individuals whom we

believe, because of their physiological make-up, have a predilection to hypertrophic arthritis. Observations on a considerable number of patients over a period of the last six years have led us to divide the patients who develop hypertrophic arthritis into the following groups: (1) Senile; (2) adipose; (3) thyroid-deficient, and (4) menopausal types. The term adipose is used in preference to the term adiposogenital as these patients do not represent the true Froelich syndrome but do suggest it; we have previously called them hypopituitary individuals but we have no evidence that the pituitary gland is at fault. It is rather unusual for a patient to fall sharply into a single classification as most patients present abnormalities characteristic of more than one group. The characteristics of each group are as follow:

In the senile patient the arthritis has not, as a rule, begun until the approach of old age, usually around 60 years, and is only another expression of degenerative changes which also involve the heart, blood vessels, the eyes, the kidneys and sometimes the brain. The heart shows degenerative heart disease with an enlargement to the left; the aorta is elongated or widened or both, with a metallic second sound, and frequently a systolic murmur is heard over the aortic area. The blood pressure may be elevated, normal or low and the electrocardiogram usually shows evidence of myocardial or coronary disease. The arteries exhibit sclerotic changes and calcification of the arteries may be seen in roentgram of the extremities. The eyes show arteriosclerosis of the retinal vessels and opacity in the vitreous body may be present. Arcus senilis and cataract are present in a few cases. The kidney function is frequently diminished as evidenced by a diminished urea clearance and a low phenolsulphonphthalein test. Elevated blood uric acid values are obtained frequently in this type of patient. Cerebral pathology such as encephalomalacia and apoplectic insults are not infrequent in the hypertensive patients. Paralysis agitans of the degenerative type occurs in a few cases.

On laboratory examination the glucose tolerance test shows a delay in the removal of the blood sugar which may be prolonged until the third hour. Frequently there is a marked increase in the initial rise from the fasting value and commonly the peak is delayed until the second hour. Some patients show fasting values above 100 mgm. and in some diabetic-like blood sugar curves with or without glycosuria are obtained. The blood cholesterol may be normal or it may be elevated if the patient has been on a high fat diet or has some endocrine disturbance. The patient may be overweight or of the slender type. Joint localization is frequently dependent upon the overweight or underweight. In the overweight patient the weight bearing joints such as the knees, sacro-iliac and lumbar spine are involved. Periarthritis of the shoulder is not uncommon and Heberden's nodes are generally present in the senile group. The degenerative arthritis

of the hip, known as *malum coxae senilis*, should be classed as a disease *sui generis*, but patients with this disease not infrequently show arteriosclerosis although there may be little or no evidence of hypertrophic arthritis in other joints.

In the adipose type of patient degenerative arthritis is apt to start early, that is before the age of 40, and affect the weight bearing joints. The excessive weight of the patient, present since adolescence or early adult life, is a contributory factor which tends to localize the disease in the weight bearing joints. The sites of predilection are the knees, the sacro-iliac joints and the lumbar spine, while Heberden's nodes are rarely seen in this type. This patient is easily recognized clinically; he is energetic and mentally alert; he looks younger than his age; his hair is fine and silky, and his skin shows a fine texture. The obesity is of the girdle type. The arms and thighs are large but the wrists and ankles are slender. Low blood pressure is the rule and, in the female, menstrual disturbances are frequent. The glucose tolerance test shows a relatively flat blood sugar curve and the blood cholesterol is normal.

Clinical variations occur in this type of individual. Commonly a thyroid deficiency is coexistent with and accompanied by a hypercholesteremia which will yield only to thyroid medication. Some patients are difficult to reduce and require a low sodium, low caloric diet.

A lean type with pronounced neurasthenia has occasionally been observed. He can be differentiated from the thyroid deficient patient by the normal blood cholesterol, the fine silky hair and the fine texture of his skin. Particularly significant in this type of patient is the flat blood sugar tolerance curve and the underweight condition since early adolescence. We suspect pituitary deficiency in this type of individual but we do not feel that we have sufficient evidence to classify this type as the lean pituitary deficient type. However, we are using that term in this paper.

In the thyroid deficient type, which in its pure form is relatively rare, the patient looks older than his age, his hair is dry and coarse and his skin shows a coarse texture. He is mentally dull, easily fatigued, lacks energy and complains of cold hands and feet. He gives a history of having been underweight and constipated all his life. His blood pressure is low, the basal metabolism is low, the glucose tolerance curve is flat and the blood cholesterol is high. In the adipose thyroid deficient patient the hypercholesteremia will yield only to thyroid medication. The arthritis affects the hands especially and Heberden's nodes are a prominent feature.

In the menopausal type the disease may begin before, during or after the menopause and artificial menopause, due either to surgery or irradiation, is frequently followed by degenerative arthritis. The patients exhibit vasomotor instability with wide variations in the blood pressure and complain of hot flashes and dizziness. The arthritis may affect



the hands and the large joints and Heberden's nodes are frequent. The blood sugar curves and blood cholesterol vary according to the endocrine make-up of the individual and his food habits. In this type of patient we frequently encountered hypercholesteremia which proved resistant to a low fat diet, thyroid medication or follicular hormone therapy. The cause of such hypercholesteremia is unknown to us. We believe that multiglandular disturbances are common in the menopause and that they make interpretation of the biochemical findings difficult.

#### TREATMENT

In the treatment of patients with degenerative arthritis we attempt to treat the joints in an effort to relieve the symptoms of which the patient complains and we also attempt to treat the patient as a whole in an effort to correct the abnormal physiology of the individual and to combat what we believe to be the underlying cause of the disease in each particular patient.

In beginning the treatment of one of these patients it is advisable to explain to him the fact that, while he has chronic arthritis, he does not have the crippling form of the disease and is not on the road to chronic invalidism. He is then told that under proper treatment not only can it be expected that the joint symptoms will lessen or disappear entirely, but that if he will continue to follow out a given regime it is probable that the joint symptoms will not recur or spread to other joints and that he may be able to be more active without causing flare-ups of the arthritis.

In regard to the joints themselves, it is important to remember that a joint affected with degenerative arthritis is a worn out joint and that further wear and tear is not a desirable method of correcting the condition. Consequently, when these patients have pain in a given joint it is advisable to rest this joint as much as is practical. This does not mean putting the patient to bed except in very severe cases, but the patient with knees which are swollen and tender should avoid walking more than is necessary until the symptoms are better. The knees should also be protected by elastic knee caps, stockinet, or other woven elastic bandages which both give support and prevent undue use. If the mechanics of the lower extremities are poor, the shoes may be altered and thus support the feet and lessen the strain on the knee joints, and finally the muscles of the patient may be built up by exercises to such a degree that they afford added protection to the joints. These exercises can be taken by the patient while lying down and thus avoid the extra use which would result from similar exercises taken while the patient is standing. For the pain, heat is usually welcome to the patient and may be prescribed as baking or as hot compresses or in the form of diathermy. It is further advisable that the patients avoid exposure to cold—not only that they sleep warm, but for the fingers

they are advised to wear woolen gloves and, in certain instances, woolen knee caps for the knees and woolen shoulder caps for the shoulders, as these joints do better if they are protected from the cold. In certain instances the patient is advised to soak the hands in hot water two or three times daily or he is advised to take contrast baths, putting the hands in cold water for two minutes and then in hot water for one minute, this to be done for thirty minutes twice a day in an effort to stimulate the circulation. If the back is at fault it can be supported with a corset, a lumbosacral belt or a low back brace and postural exercises are advised.

In the treatment of the patient as a whole we prescribe a high vitamin, low fat diet for all these patients. If the patient is underweight the diet is high in calories and an effort is made to bring the patient's weight up to what we believe is normal for the given individual; if the patient is overweight, and this is the rule, a low caloric diet is given and an effort is made to bring his weight down to what we consider normal for the given individual. Regardless of the caloric content of the diet, the amount of fat is kept low (about 30 grams), the amount of protein is between 80 and 100 grams and the carbohydrate varies with the caloric content, being kept around 200 grams in the reducing diets and at from 200 to 500 grams daily in the diets of the patients whose weight is satisfactory or in whom we wish to increase the weight.

Routinely we add vitamins to the diets of our patients with degenerative arthritis. We have not noted that vitamins A, C or D have any relation to the disease. However, with the use of the low fat regime, including only 30 grams of fat a day, enough vitamins A and D should be supplied to compensate for the deficiency of these fat soluble vitamins in the diet and consequently we have these patients take one capsule of haliver oil with viosterol daily. As to the vitamin C intake, six ounces of tomato juice or orange juice daily is advised to insure the proper amount for normal nutrition. We believe that vitamin B has some relation to the degenerative disease, especially as we find that a large percentage of our patients have been on a diet which is deficient in this vitamin for a number of years. In patients with rheumatic complaints of a neuritic type and in those with disturbances of the gastro-intestinal tract such as anorexia, reduction in gastric acidity and constipation due to a decreased tonus, vitamin B therapy is especially useful. Our senile patients with degenerative heart disease had fewer cardiovascular complaints after they had been on vitamin B therapy for a few months. In patients undergoing a reducing regime, optimum amounts of vitamin B should be included in the dietary schedule; otherwise, they complain of weakness and look haggard. Consequently, we give all our patients with hypertrophic arthritis relatively large amounts of vitamin B. We have used wheat germ from the Purina Mills, concentrated yeast vitamin from Anheuser-Busch, Betalin Compound (Lilly) and Betabion

(Merck), the last being supplied in 10 mgm. ampules for intramuscular use.

In the senile patient the caloric intake of the diet is dependent upon the overweight or underweight of the patient. The essential therapy is the low fat regime and high vitamin B medication. The low fat regime of 30 grams of fat per day is usually followed by a marked improvement in the delay of the blood sugar removal and in those patients with a low blood diastase this tends to rise frequently to within the normal range. The hypercholesteremia, if due to an excessive fat intake, will become lessened. Clinically a drop in the blood pressure to much lower levels was frequently observed in patients on this dietary regime and with vitamin B medication the cardiovascular symptoms seemed to decrease. The appetite of the old individuals was improved and the abdominal distension and constipation were lessened. In those patients with a Parkinsonian syndrome of the degenerative type the paralysis agitans was greatly ameliorated.

After a few months of treatment on this regime the senile patient tends to make a marked symptomatic improvement, not only in the arthritis but in the development of a sense of well-being. The shifting rheumatic pains disappear, the joint stiffness decreases, the joint motion becomes more free and the patient is less easily fatigued. The improvement tends to continue as long as the patient adheres to the recommended regime.

In the obese adipose type, weight reduction is the essential therapy and with a reducing regime of 30 grams of fat, 80 grams of protein and 200 grams of carbohydrate per day, a weight loss of two pounds per week is commonly achieved. Vitamin B should be an essential part of such a reducing scheme; otherwise, the patient may become weak and haggard looking. With a reduction in weight the rheumatic pains in the weight bearing joints decrease and may disappear when the patient is reduced to his normal weight.

In some of the obese patients the sodium intake must be curtailed; otherwise, a satisfactory weight loss cannot be obtained. This type of patient is commonly difficult to reduce and frequently the caloric intake must be lowered to 1000 calories a day.

In the obese adipose patient with thyroid deficiency, thyroid medication is necessary not only to obtain a proper weight loss but also a drop in the blood cholesterol to normal.

In the lean pituitary deficient type a weight gain is desirable and this is more readily achieved by a low fat, high caloric diet than by a high fat, high caloric regime. This type seems to require a high vitamin intake for weight gain.

In the thyroid deficient patient the essential treatment is thyroid medication. The amount of thyroid given is that necessary for a drop in the cholesterol to 220 mgm. per cent. In our cholesterol studies a 30 gram fat diet is routinely employed to determine whether the existing hypercholesteremia is due to

nutritional factors or to thyroid deficiency. In this study thyraclin (Winthrop) was used exclusively. It proved less toxic and more effective than less refined thyroid products and was well tolerated by almost all the patients.

In the underweight patient the effective dose varies from 6 mgm. to 25 mgm. and the average maintenance dose rarely exceeded 12½ mgm. Frequently the patient gained weight on such a regime.

In the overweight patient the dosage of thyraclin was adapted to individual requirements with the aim of obtaining a weight loss of two pounds per week and a drop of cholesterol to about 220 mgms. The required daily dose varied from 25 mgms. to 75 mgms. and was dependent upon the amount of thyroid deficiency present. The maintenance dose rarely exceeded 25 mgm.

The therapeutic results in the thyroid deficient patients are very satisfactory. In the underweight patient small amounts of thyroid resulted in a weight gain and in the overweight patient, large amounts resulted in the desired weight loss. The drop in cholesterol is prompt and with such drop the patient becomes more alert, feels less tired and frequently is less constipated. In some of the patients with secondary anemia an improvement of the anemia has been observed. The shifting rheumatic pains disappear and when the patient is overweight the rheumatic pain in the weight bearing joints tends to disappear when the patient reaches his ideal normal weight.

We treat the menopausal patient according to the above general principles with the low fat, high vitamin diet, treat the joints symptomatically and if patients are overweight we attempt to reduce them while if they are underweight we attempt to bring their weight up to normal. Frequently, this type of patient shows multiglandular disturbances. A great percentage of these patients are thyroid deficient and these are benefited by the addition of thyroid medication. In the adipose type the regime outlined for the above is used.

In those patients in whom the existing hypercholesteremia proves resistant not only to low fat diet but also to thyroid medication, the results are the least satisfactory. In those patients who show a marked delay in the blood sugar removal a low fat regime brought about an improvement. Theelin medication seems to be beneficial for the menopausal complaints but has no influence upon the arthritic symptoms.

#### CONCLUSION

The patients who develop hypertrophic arthritis can be divided into four types and in addition to the local treatment of the joints the patient as a whole should be treated. Under the system of treatment outlined in this paper we have been able to do more for these patients than we have done in the past.

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## NEWER TREATMENT OF ARTHRITIS AND SIMILAR CONDITIONS

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The subject of arthritis is at present receiving an increased amount of attention by the medical profession; and it should, for its incidence is high. The suffering and deformities resulting from it have caused grave economic concern. Physicians in the past in large part have looked upon arthritis with too much pessimism and, because brilliant results are not obtained as frequently in this disease as in others, they have too easily become discouraged. The increased interest in arthritis is most encouraging and no doubt will stimulate us so that the outlook will not be as gloomy as in the past.

The object of this paper is to introduce an additional procedure in the treatment of arthritis. I want to make clear at the beginning that this method of treatment is not a cure-all and should be used only as an adjunct to other recognized therapy; namely, rest, removal of foci of infection, corrected diet, orthopedic corrections, correction of metabolic irregularities and endocrine disturbances, massage, heat, diathermy and various medications.

### PHYSIOLOGIC ACTION

This new method is iontophoresis or ionization with the simple galvanic machine, and a new drug called acetyl-beta-methylcholine chloride, better known under the trade name of "Mecholyl." Iontophoresis is defined as the introduction of ions into the body by the electric current for therapeutic purposes. This current must be a galvanic or direct current and the drug must be in solution to become ionized; the positively charged ions are attracted to the electrode of opposite electrification, the kathode, and thus driven into the tissues.

Mecholyl is a parasympathetic nerve stimulant; used by this method the positively charged part of the molecule is repelled at the positive electrode by the galvanic current toward the negative electrode into the capillaries of the skin where it is taken up by the blood stream. It produces a vasodilatation with a prolonged effect characterized by localized sweating and redness of the skin with a rise in temperature of from 4 to 10 degrees F. over the treated part. The goose flesh due to the contraction of the erector muscles of the hair follicles is noticed immediately after treatment and disappears within from 10 to 30 minutes. The sweating continues for from 8 to 10 hours, probably due to a direct action of the drug on the sweat glands or their nerve supply. The increase in skin temperature, especially where a spasm of the peripheral blood supply was present, is probably due to the dilatation of the arterioles and increase blood supply to the treated part. We see an increase of

rate of capillary flow. A slight increase of the local leukocyte count of from 600 to 1000 occurs.

The general effects are increased salivation, increased depth of respiration, rise of the pulse rate, a slight lowering of the blood pressure, slight flushing of the face, perspiration all over the body and at times increased intestinal peristalsis. The acceleration of heart rate undoubtedly is not parasympathetic stimulation but may be explained as passive paralleling of the lowering of blood pressure.

The subjective symptoms are a sensation of warmth in the treated parts maintained for from 24 to 72 hours, a marked relief of pain and a feeling of comfort in the parts treated, a reduction of swelling and an increase of mobility.

That the effect of mecholyl iontophoresis is specific and not a simple galvanic effect was demonstrated by Kovacs in the following way: Both hands of a patient were treated at the same time, one hand with the drug and the other with normal salt solution. Both hands were connected to the positive pole by means of a bifurcated cord. The indifferent negative electrode was placed on the back. After a 20 minute treatment with a 20 milli-ampere galvanic current the hand with the normal salt solution remained cold and there was no sweating, only a slight redness in patches and the capillary picture remained unchanged. But the hand treated with the drug showed all the characteristic symptoms of mecholyl iontophoresis as increased skin temperature, sweating (which continued from 6 to 8 hours), goose flesh, faster capillary flow and a slight diffuse redness.

These physiological effects cannot be obtained with any degree of satisfaction if the drug is given orally, and the action would not be localized.

### CIRCULATORY DISTURBANCE IN ARTHRITIS

In 1909 Wollenberg, on the basis of arteriosclerotic changes in the arthritic joint, advanced the theory of the vascular origin of osteo-arthritis; experimentally he produced overgrowth of the patella by a circular ligation of the blood vessels. The experiment was repeated and confirmed by Goldhaft and his coworkers who had previously demonstrated a deficiency of peripheral circulation in arthritis.

The importance of circulatory disturbances in rheumatic disorders has recently attracted much attention. E. G. Pierce and R. Pemberton of the Presbyterian Hospital, Philadelphia, did some interesting classification studies of the capillaries in patients attending the rheumatic clinic by systematic observation of nail bed capillaries. The striking feature in nearly all examinations of rheumatic subjects was the spastic or attenuated condition of the capillaries. This suggested the presence of an abnormal vasoconstrictor substance or the lack of a normal vasodilator. Either factor might be expected to produce an imbalance and so affect the caliber of the capillaries.

Therefore it is logical to surmise that any therapy

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which will increase the blood supply to an arthritic joint associated with a pathological condition related to impairment of the peripheral circulation, will benefit that joint. The beneficial effect of diathermy and infra-red rays in rheumatic infections is considered due chiefly to a temporary increase of blood supply. So, using a drug in a physiochemical form which brings about a profound and fairly well lasting stimulation of local circulation, much longer than results from diathermy, as just described and thus increase the blood and lymph supply to the affected part, we would expect beneficial effects.

CLASSIFICATION OF ARTHRITIS

The classification of arthritis can stand some improvement, but a working classification is as follows:

1. Acute Arthritis
- a. Infectious (rheumatic, gonococcic, pneumococcal and nonspecific, etc.)
- b. Noninfectious (traumatic, allergic, gout, etc.)
2. Chronic Arthritis
- a. Infectious (rheumatoid, atrophic, chronic infectious, or arthritis deformans; syphilis, tuberculosis, etc.)
- b. Noninfectious (osteo-arthritis, hypertrophic or degenerative; senile, menopausal, etc.)

The types of arthritis we are most concerned with in this paper are the rheumatoid (atrophic), osteoarthritis (hypertrophic), traumatic and acute arthritis. The rheumatoid arthritis is the most prevalent of the chronic arthropathies, and the most important differential diagnosis is between this and the osteo-arthritis. In osteo-arthritis there is an absence of inflammatory swelling; the disease does not spread but remains localized in a few joints, and foci of infection usually are absent. In rheumatoid arthritis there is a loss of calcium in the bone which is much more transparent than normal to the roentgram. In osteo-arthritis there is an increased amount of calcium deposit, particularly around the joint, which in the roentgram appears as a condensation of the bone adjacent to the articular surface and an actual new formation of bone around the margins of the joint.

Table 1 gives a condensed differential diagnosis of the rheumatoid and osteo-arthritis.

TECHNIC

A .1 per cent or a 1:1000 solution of mecholyl, an alkaloid, is introduced into the affected part from the positive electrode. Absorbent paper, sheet wadding, reinforced asbestos fabric paper or cotton filled bandage is saturated with the solution and wrapped around the part to be treated. On top of this a tin lead plate or strip is wrapped around the part and connected with the positive pole of the galvanic machine. A large regular moist pad electrode is placed under the back or over the abdomen and connected with the negative pole. The current is gradually increased to from 20 to 30 milliamperes and maintained for from 20 to 30 minutes. Then the current is slowly turned off, electrodes removed, parts dried and wrapped. There may be a slight tingling sensation under the electrodes during the treatment but the current strength must always be within comfortable toleration of the patient.

Treatments are given every day at first and the intervals between treatments gradually lengthened until they are given every week or two.

The degree of concentration of mecholyl in solution within limits from 1:200 to 1:8000 does not seem to influence the physiologic effects produced. However, the rapidity of action and duration of effect can be fairly well controlled by the amount and duration of current applied.

The general physiologic action of mecholyl can at once be removed by the hypodermic administration of atropine. I have never had to use this antidote at any time.

CONTRAINDICATIONS

Mecholyl iontophoresis is contraindicated in septic patients, patients with bronchial and other types of asthma on account of the possibility of slight pulmonary edema, and it must be used with caution in patients with a heart involvement.

CLINICAL RESULTS

From a clinical standpoint Kovacs of New York was the first to administer acetyl-beta-methylcholine chloride by iontophoresis for arthritis, reporting it in 1934. Deutsch, in 1931, was the first to introduce histamine iontophoresis.

In order to evaluate results properly we consider them as good, fair and poor: Good results, when there is freedom from pain, reduction of swelling

Table 1. Differential Diagnosis

	Rheumatoid Arthritis	Osteo-Arthritis
Average age at onset	Third and fourth decades	Fifth and sixth decades
Weight	Normal or underweight	Usually overweight
Blood	Low hemoglobin	Normal hemoglobin
Foci of infection	Usually present	Usually absent
Condition of bones	Rarefaction	Condensation of articular margins
Joints involved	Any joint in body	Chiefly knees and fingers
Type	Migratory progressive	Localized
Appearance of joints	Periarticular swelling	No swelling
Special signs	Fusiform finger joints	Heberden's nodes
Roentgen ray	Narrowing and clouding of joint space	Lipping of bony margins of joints
Termination	Ankylosis and deformity	No ankylosis; usually no deformity



or deformity, increased mobility and improvement of function; fair results, when there is partial relief of pain, etc., and poor results when there is no relief of pain. Again, I want to emphasize that iontophoresis is just one part of the treatment for arthritis, but it plays a large part because, in my small series of cases, I find 80 per cent of them show a definite improvement. These percentages conform with reports of other men using this type of treatment. And most of these cases have previously had a long trial of treatment with conventional

methods without results but showed clear improvement after the first few treatments with meeholyl iontophoresis. Many cases not only showed definite elimination of swelling and deformity but also marked improvement in strength and function.

Osteo-arthritis does not show similar clear improvement, as a rule. Diathermy in conjunction with iontophoresis seemed to show the best results in this type of arthritis.

Abel, St. Louis, reports a series of seventy-seven

Table 2. Results With the Use of Meeholyl in 20 Cases

No.	Age	Sex	Diagnosis and Duration Before Treatment	Conventional Treatment	No. Tr.	Progress of Patient	Result at End
1	45	F	Osteo arthritis, right knee (1½ yrs.)	Salicylates, infra-red heat, teeth removed	4	Pain gone, use regained	Good
2	73	M	Rheumatoid arthritis, knees, wrists, finger, shoulders (2 mos.)	Salicylates, K. I., sedatives, teeth removed, tonics	8	Bed ridden at first, pain much improved, function regained	Good
3	45	F	Osteo arthritis, left knee, (1 mo.)	Diathermy, heat, salic.	5	Pain much reduced, mobility improved	Good
4	40	M	Gout arthritis, fingers (1 yr.)	Cinchophen, diet, heat	3	Pain and deformity improved	Good
5	56	F	Rheumatoid arthritis, knees, ankles, fingers, back (8 yrs.)	Salicylates, heat, sedatives, diathermy, intravenous therapy, teeth removed	6	Stiffness and pain relieved under treatment. Recurred	Fair
6	74	M	Rheumatoid arthritis, knees (1 yr.)	Diathermy, heat, salic.	5	No improvement in the swelling or ankylosis	Poor
7	18	M	Traumatic arthritis and synovitis, right wrist (3 mos.)	Cast applied for 2 wks., heat	6	Deformity and pain gone, complete function regained	Good
8	24	M	Acute rheumatic arthritis, left knee (2 wks.) (? of G. C.)	Salicylates, heat	3	Pain, swelling and inflammation gone	Good
9	65	M	Sacro-iliac arthritis and bilateral sciatica (1 mo.)	Diathermy, heat, salic., sedatives, diet, K. I.	9	Bed ridden at first. Moderate decrease in pain. Gain in function	Fair
10	47	M	Sacro-iliac arthritis and slight sciatica, right side (5 yrs.)	Salicylates, heat, brace	3	Complicated by scoliosis. No improvement	Poor
11	31	F	Traumatic arthritis and synovitis, right wrist (1 mo.)	Salicylates, heat, splint	6	Pain, deformity, stiffness gone	Good
12	40	M	Sacro-iliac arthritis and sciatica on left (1 mo.)	Diathermy, salicylates	3	Pain left, function regained	Good
13	44	M	Sciatica, right (1 mo.) (bed ridden)	Heat, massage, salic., K. I.	8	Pain gone, function regained	Good
14	60	M	Sciatica, right (1 wk.)	Salicylates, heat	2	Pain left	Good
15	33	M	Intercostal neuritis (2 wks.)	No other treatment	2	Pain left	Good
16	56	M	Chronic synovitis, left wrist (3 mos.)	Salicylates, heat, K. I.	3	Moderate decrease in pain, no decrease in deformity	Fair
17	35	F	Sacro-iliac arthritis and sciatica (4 mos.)	Salicylates, heat, K. I., diathermy, sedatives	9	Pain reduced moderate	Fair
18	55	F	Neuritis (cervical), bilateral (5 mos.)	Salicylates, K. I., heat, massage	2	Stiffness and pain much decreased	Good
19	40	M	Sacro-iliac arthritis and sciatica, right (2 mos.)	Salicylates	2	Slight improvement during treatment but returned. Later removed teeth and cured	Poor
20	27	M	Sacro-iliac arthritis (3 mos.)	Salicylates, heat, K. I.	4	Only temporarily relieved during treatment and returned. Later removed a chronic appendix and cured.	Poor

cases of osteo-arthritis and rheumatoid arthritis that have received this treatment during the last one and one half years, and there has resulted a relief of pain in about 85 per cent, and he reports a 100 per cent relief in myositis and neuritis.

King, Los Angeles, reports 83 per cent improvement or cure in a series of 730 cases of myositis, contractures, arthritis, neuralgias, etc., with from one to seventeen treatments with histamine. Histamine is an older drug that had been used before mecholyl was introduced, but is not used as much now as mecholyl.

Mathae, St. Louis, reports sixty cases of arthritis with 67 per cent good results, 25 per cent fair results (a total of 92 per cent improved) and 8 per cent poor results.

Good results are also reported in treatment of cases of Reynaud's disease, varicose ulcers, diabetic gangrene, neuritis, sciatica, chronic ulcers of the legs, bursitis, ergot poisoning, traumatic arthritis and gonococcal arthritis. I have personally had good results in traumatic arthritis, synovitis, sciatica, dry pleurisy and neuritis, besides chronic arthritis.

## SUMMARY

Mecholyl iontophoresis is a safe and dependable form of treatment to add to the conventional forms of treatment of arthritis.

Mecholyl introduced locally with the help of the galvanic current produces a pronounced and prolonged local effect which cannot be obtained through subcutaneous or oral administration.

This method is of value in local treatment of rheumatoid arthritis, osteo-arthritis, traumatic arthritis, myositis, neuritis, bursitis, synovitis, chronic ulcers, sciatica and similar conditions affecting the peripheral circulatory system.

No harmful general or local effects were observed.

Further studies and observation of cases with this type of treatment are warranted and will probably give us more information in the future.

## SUMMARY OF CASES

Results with mecholyl iontophoresis: Good 60 per cent, fair 20 per cent, improved 80 per cent, poor 20 per cent.

Results without mecholyl iontophoresis: Good

Table 3. Results Without the Use of Mecholyl in 16 Cases

No.	Age	Sex	Diagnosis and Duration	Conventional Treatment	No. Tr.	Progress of Patient	Result at End
1	66	M	Rheumatoid arthritis, general (5 yrs.)	Salicylates, K. I., sedatives, heat, vaccines, intravenous therapy. Teeth extracted	0	No improvement, expired	Poor
2	72	F	Rheumatoid arthritis, knees (10 yrs.)	Salicylates, K. I., heat	0	No improvement	Poor
3	55	M	Rheumatoid arthritis, knees, fingers (5 yrs.)	Diathermy, heat, sedatives, salicylates	0	No improvement, marked deformity	Poor
4	43	M	Osteo-arthritis, spine, scoliosis (5 yrs.)	Brace, salicylates, heat, massage	0	No improvement	Poor
5	18	F	Acute arthritis, knees and wrists (rheumatic 2 mos.)	Salicylates, sedatives	0	Pain and swelling left	Good
6	25	M	Acute arthritis, back (rheumatic) (5 yrs.)	Salicylates, Oxo-ate "B," tonsillectomy	0	Pain left, function returned	Good
7	56	M	Sacro-iliac arthritis, sciatica (3 yrs.)	Salicylates, heat, teeth extracted	0	No improvement	Poor
8	21	F	Teno-synovitis, right wrist (4 wks.)	Cast applied, heat	0	Pain and swelling left	Good
9	34	M	Sacro-iliac arthritis, sciatica (2 mos.)	Salicylates, heat, brace	0	No improvement	Poor
10	14	F	Acute arthritis, right knee (rheumatic 1 mo.)	Salicylates, diet	0	Improved slightly	Fair
11	72	M	Sciatica bilateral after influenza (2 mos.)	Salicylates, heat, El. I. Q. & S.	0	No improvement	Poor
12	53	M	Osteo-arthritis, right shoulder (5 yrs.)	Salicylates, heat	0	No improvement	Poor
13	50	M	Rheumatoid arthritis, spine (10 yrs.)	Salicylates, brace, heat	0	No improvement	Poor
14	37	M	Neuritis left cervical and shoulder (3 mos.)	Salicylates, heat, massage	0	Slight improvement, recurs	Fair
15	48	M	Sciatica left (10 yrs.)	Salicylates, heat, extracted teeth	0	Slight reduction of pain	Fair
16	26	M	Sacro-iliac arthritis (2 mos.)	Salicylates, brace, heat	0	Symptoms gone	Good



26 per cent, fair 18 per cent, improved 44 per cent, poor 56 per cent.

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## INSULIN SHOCK THERAPY

### ITS IMPORTANCE IN GENERAL PRACTICE

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Schizophrenia (dementia praecox) is a major social problem. The state hospitals for the care and treatment of the insane are full of hopelessly incapacitated sufferers of this strange malady. Psychiatrists have searched for the etiology and treatment of this condition without outstanding success. There are a number of possible theories of cause, none of which has been universally adopted. Without a clear-cut determination of what causes this condition, treatment of necessity must be empirical and supportive. Until 1934 it was entirely supportive. Psychotherapy, occupational therapy, physiotherapy, environmental changes and similar methods were employed without outstanding success. Approximately 25 per cent of these cases had remissions and were returned home superficially normal. However, the great majority usually relapsed and the second attack was almost invariably permanent.

In 1934, Sakel<sup>1</sup> published his first report on insulin shock therapy as practiced at the University Neurological and Psychiatric Clinic in Vienna. His results startled the medical world and since then this treatment has been investigated, tried out and used throughout the world with varying results. Everyone has been naturally skeptical and today it cannot be said that the treatment has been completely studied or completely standardized. A review of the literature presents a most unusual situation. Medical discoveries in the past such as liver extract, diphtheria antitoxin and others have been found to be applicable universally to the disease for which they were used. Reports of the insulin shock treatment, on the other hand, seem to vary depending upon the acuity and professional instinct of the individual operator. An example is Nissenbaum<sup>2</sup> who reports seven patients treated, five showing definite improvement during the course

of treatment but only one retaining improvement after the treatment was discontinued. One patient became worse and one could not be carried through the routine. Sakel<sup>1</sup> originally reported two duration groups: Less than six months, 86 per cent remissions, full, good or fit for work, and in the over six months groups, 45 per cent remissions, full, good or fit for work. Muller<sup>4</sup> reports 50 per cent full remissions and an additional 30 per cent improved in unclassified cases. When we compare this to results under older methods of treatment, as reported by Whitehead,<sup>3</sup> we see that this is a definite advance. Whitehead analyzed cases admitted to Utica State Hospital which would have had this treatment if the hospital had been using it at the time of their admission. He found that the following results were obtained in the three duration period divisions: First, less than six months, 50 per cent improvement, 22 per cent recovery; the second, six to eighteen months, 38 per cent improvement, no recoveries; the third, over eighteen months, 23 per cent improvement, no recoveries. He concludes that these results parallel, but were only one half as good as those reported from hypoglycemic therapy.

It is unnecessary to review all of the results reported. The above are examples of the wide variance in reports. A careful study of the literature, however, reveals that when the cases are properly selected and the treatment procedure carefully performed the results are so far superior to any previous method of treatment that has been reported in the past that this procedure should be tried on all cases. In other words, although selection gives our best results, up to now no standardized criteria of selection has been worked out and, therefore, no case should be denied this treatment because the clinical picture appears unfavorable in its outlook. It is true that the paranoid and catatonic types give us the most remarkable objective evidences of improvement and recovery, but the simple and stuporous cases apparently likewise respond, although the results are not as dramatic as in the other types.

Because of this last fact, I believe that superficial observation of the mild cases do not reveal the improvement that has taken place. The second fact that one derives from a study and from one's own results is that the earlier a case is treated the better the results. It is important that these cases be treated during the first six months of the disease, if possible. The best results and the most permanent results are obtained during this duration period. Therefore it becomes the duty and the obligation of the physician engaged in general practice to give careful thought and attention to any psychiatric problem with which he comes in contact. If he suspects that the case has an early schizophrenia then, even though the symptoms do not of necessity demand hospitalization at that time, the family and the patient should be urged to take advantage of this treatment as soon as possible.

The practitioner who is not experienced with psychiatric problems may ask what the indications are. This treatment is indicated in every case which can be classified under the heading of dementia praecox, according to Kraepelin's classical description. It is especially helpful in cases with delusion and hallucination symptom groups, and the various catatonic phenomena. The simple schizoid types and the pre-schizoid personality defects will probably not show any change. However, if these cases develop marked depressions or stuporous manifestations they should have treatment and, with careful handling under new methods of treatment and termination of treatment at the proper time, much can be done to eliminate these superimposed symptoms which have developed upon an imperfect personality. However, we do not as yet feel that we can hope to correct long-standing personality defects in every case, although many have shown some improvement in this respect. The chief hopes from this treatment, therefore, seem to be the elimination of incapacitating symptoms, thus making hospitalization unnecessary for years to come, and it should return most of these cases home and to gainful work.

It is true, of course, that this treatment is as yet in the experimental stage, and results now may be much poorer than those we can expect in the future after the treatment has been completely studied and investigated. At the present time we cannot predict that the results will be permanent. Relapses may occur, just as we have seen in apparent cures under supportive treatment. But with all of this, some important facts should be kept in mind. The treatment is dangerous but so is gastric resection for the removal of carcinoma. Also, there is a definite misconception about the treatment. To date, probably over a thousand cases have been reported from all over the world. Only three deaths have been reported and these were in the very earliest days of the treatment. Since then no deaths have occurred, as far as literature shows. We have carried, or are carrying, at the Neurological Hospital, forty-two cases through this treatment with no complications more serious than an inhalation reaction. Deaths may occur as deaths may happen after any medical treatment. I consider insulin shock therapy to be safer than any form of operation designated as major by the surgeons.

The treatment must be given in a hospital that is fully equipped in every respect. Weekly, sometimes daily, laboratory tests are necessary. Daily examinations should be made. A competent, trained staff must be constantly on duty and on the alert for every sign of possibly developing trouble. Thus dangers are minimized. In fact, at the more advanced clinics, they seem to have been completely eliminated by exercising every precaution.

While we may hesitate to apply this treatment to certain types of cases, and some men hesitate to use it at all, by thus hesitating we may be dooming some people to a hopeless, permanent living death.

The treatment may be dangerous. It may be experimental. Schizophrenia, on the other hand, is hopeless and permanent. Surely it is better to offer all patients suffering with this disease a chance rather than condemning them to hopeless insanity. Everyone should remember that every day which passes without the application of this treatment in the case lessens the chance of recovery. My best advice to all doctors is, "Do not hesitate. Place your patient in the hands of a skilled, experienced psychiatrist, even though you may have misgivings. The results will probably surprise you."

2625 Paseo.

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## RICKETS AND OSTEOMALACIA

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There is a group of bone diseases similar clinically, roentgenologically and pathologically to a degree that frequently raises doubt as to their different identities. This group includes rickets, osteomalacia and osteitis fibrosa cystica generalis and, to a related extent, a series of bone diseases which may be associated if only by similarity in name. These latter are adolescent rickets (also called juvenile, late, retarded), fetal rickets, renal rickets, hunger osteomalacia, osteitis deformans and local osteitis fibrosa cystica.

Among all these diseases only one, osteitis fibrosa cystica, has been definitely proved to be due to dysfunction of a gland, namely, the parathyroid. Mandl, in 1926, and Dubois, in 1930, were the first to demonstrate the presence of the adenoma of the parathyroid in cases of clinical Von Recklinghausen's disease. Since their work, overanxious zeal has caused many to claim the parathyroid tumor the basis of other diseases of the bone as Paget's, ankylosing arthritis and osteomalacia. On superficial examination one is lead then to consider the lesion as a partial basis even in rickets since many consider osteomalacia only an adult stage of infantile rickets.

In view of a definite uncertainty it should be of interest to know just how and wherein these disease entities may be related according to our present evidence. It is essential then to know the changes occurring in the bone as evidenced by clinical course, roentgen ray, pathological examination and metabolic studies.

Our knowledge of rickets is extensive and it is apparently well substantiated as a disease of metabolic disturbance on a deficiency basis. The con-



fusion enters when we are confronted with the varied types of rickets, i. e., fetal, juvenile, retarded, adolescent, renal and celiac forms.

Of this group the true deficiency rickets is a disease of infancy seldom occurring after the age of 2, according to Howard and Mills. It is a generalized condition with more characteristic manifestations appearing in the osseous structure. There are enlargements of the epiphyseal junctions, softening and bending of the bones, stunted growth, abnormal proliferation of the epiphyseal cartilage, and osteoid tissue formation. When the microscopic picture is known these deformities are understood.

Growth of the long bones occurs at the diaphyseal side of the epiphyseal plate. Examining a section of normal bone through the epiphyseal region and progressing toward the diaphyseal side one finds the cartilage cells arranging themselves in longitudinal obliquely directed columns, the lower cells increasing in size and number in each space. They are separated by an intervening hyaline cartilage matrix. This is called the zone of cartilage proliferation. In its deeper region calcium salts are deposited giving the deep blue stain with hematoxylin-eosin stain. One may say that a calcified diaphragm is formed transversely across the bone pierced by the columns of cartilage cells. This is the zone of provisional calcification. There then occurs absorption of this calcified matrix by the extension of the vascular medulla into it, freeing the cartilage cells, whereupon cells known as osteoblasts arrange themselves along these channels or spaces. Laminated bone matrix is laid down along them giving rise to a normal trabeculated bone. This is the medullary forming zone.

In rickets one sees a wild disordered growth easily visualized as a disruption of the normal orderly boundaries between the three parallel zones with any and all stages of bone metaplasia present throughout. Of prime importance, the bone is not laminated bone, but non-laminated osteoid bone; that is, a bone matrix without calcium and of a different order than cartilage matrix. This tissue is soft and yielding. Also the medullary spaces are different in content and mode of formation. They are filled with a highly vascularized connective tissue with lymphocytes and no fat cells. This alteration is present wherever ossification is occurring, from cartilage, beneath the periosteum, or from the medullary tissue. Occasional central areas of calcification are observed as evidenced by the deep blue staining areas in the pink osteoid tissue. This osteoid bone is formed by the metaplasia of the cartilage around the invading medullary extensions. The process is a change in the matrix, the cartilage cells taking a passive activity here. Again, the connective tissue of the medulla shows a metaplasia directly into osteoid bone. The connective tissue cells become closer, more compact and finally appear as osteoid tissue without the intervention of osteoblasts.

The factors, then, in the rachitic bone are an abnormal activity of cartilage cell proliferation, and of the medullary tissue, with an active resorption of the bone. As a result of these changes to osteoid or soft bone the deformities of rickets occur as secondary manifestations due to weight bearing and, to some extent, muscle pull.

The deformities of the wrists are due to the squashing of the osteoid bone as the child crawls about and are not as evident in the legs. The bowing deformities occur as the child attempts to walk. The beading of the ribs is likewise a result of rib pressure on the rachitic costochondral junctions and is more prominent on the posterior surface of the ribs. The changes in skull shape are due to the metaplasia to osteoid bone; and the membranous patches or craniotabes are islets of undeveloped bone rather than pressure atrophy changes. As one would expect, there is a delay in the ossification of the sutures. The spine develops kyphotic and scoliotic curves as a result of weight and muscle pull on the softened bone. Similar changes develop in the pelvis. Fractures occur, usually of the green stick or subperiosteal type, as a result of the softening of the bone or the attenuation of the original compact laminae. In the formation of Harrison's sulcus the falling in of the anterior portions of the ribs when marked may result in fractures at the deepest points with rows of prominences due to callus formation. The roentgen ray picture shows the wide fuzzy cupped epiphyseal plate regions with retarded and sometimes absent centers of ossification for the age period. With treatment most of the deformities improve, even curved bones straighten and the epiphyses assume normal structure with occasional rachitic rests persisting. Experimentally and clinically this condition is amenable to a diet with adequate calcium, phosphorus and vitamin D. Therefore this is a true deficiency disease.

Fetal rickets,<sup>10</sup> also called achondroplasia, is a congenital disturbance of ossification of the long bones at different stages of uterine growth. It apparently has no relationship to the infantile rickets. The roentgen ray and microscopic pictures are different. This condition shows an insufficient proliferation of cartilage cells and an early cessation of their growth at the epiphyses, or a softening of the cartilage with irregular ossification, or a marked proliferation of cartilage cells with interrupted ossification. Clinically this type shows the shortened limbs with an apparently faster growing trunk. There is no question of a glandular disturbance here yet not a parathyroid disorder alone. Pathologically it does not resemble rickets.

Celiac rickets, sometimes called infantilism, is a definite clinical entity related through the similarity in bone picture which is the result of the body's inability to absorb the split fats in the intestines and therefore the fat soluble vitamins. The age incidence is from 3 to 16 years. Clinically the picture is that of an undernourished child with

markedly prominent abdomen, little subcutaneous fat and rachitic deformities, i. e., bowing, knock knee. There are frequent and offensive stools containing large amounts of fat and mucus. Celiac rickets is a related condition in that the bone metabolism is disturbed through the lack of vitamins and so results in a rachitic bone.

In renal rickets one again finds the typical rachitic bone deformities and pathology, yet here also these are the results of another primary factor. The condition appears between the ages of 1 and 12 years. These children show a retardation of growth beginning at birth or early infancy. The incidence is higher among boys. As a result these children are from two to nine years behind in growth. The most frequent deformity is the knock knee. The cases are possibly the result of a renal lesion either (a) congenital malformation of the kidney or the urinary tract or (b) chronic renal insufficiency giving way to chronic interstitial nephritis. On the other hand, Chown<sup>16</sup> believes the kidney nephritis is due to glandular dysfunction. Schoenthal and Burpee<sup>8</sup> have reported one case of a male aged 8 years who was studied over a five year period. They felt that the renal insufficiency led to an acidosis which in turn resulted in a mobilization of the calcium from the bones. This explanation does not fully account for the metabolic sequence in view of more recent work. Up to 1930 about thirty-four cases of renal rickets had been reported. It has been suggested that the condition were better called renal pseudo-rachitism or renal infantilism. Metabolically the disease does resemble osteitis fibrosa cystica. As a result of the renal insufficiency a phosphorus retention occurs even though the phosphorus is eliminated as insoluble calcium phosphates through the bowel. The parathyroid is stimulated by the retention and develops a hyperplasia to aid in the elimination through the kidney, and with this hyperplasia decalcification occurs. Experimentally it has been proved that a high phosphorus diet will cause hyperplasia of the parathyroid.<sup>2</sup> Just which factor in this disease is the basis of the decalcification is to be found among the following all of which must be in some way related in the process: The persistent acidosis, the retention of electrolytes and nonprotein nitrogen which increase the solubility of the calcium phosphate, overactivity of the parathyroids and loss of the calcium by the colon as insoluble calcium phosphate. It is apparent then that renal rickets does resemble osteitis fibrosa cystica generalis in its metabolic manifestations but not pathologically; and as a result of the decalcification the deformities of the bones occur. That the typical rachitic bone picture is obtained is doubtful. This condition is then one of the high serum phosphorus as distinguished from the infantile rickets with its relatively low serum phosphorus.

One more type of rickets must now be considered. This is the adolescent rickets, also called late, juvenile or retarded rickets. The condition in-

cludes a large group of cases showing rachitic deformities with evidence to substantiate a clinical entity. It is stated in Jones and Lovett<sup>10</sup> that Ollier in 1861 was the first to "clearly identify" the condition. It is further stated that there are two types, appearing the first time in adolescence, and the reappearance of rickets after a period of remission. Late rickets usually appears after some debilitating disease or local lesion. Its deformities are of the same order as found in renal rickets. The relationship of this condition to osteomalacia is definite. Its appearance at the stage of puberty suggests the combined action of a metabolic disturbance imposing itself upon the physiologically overstrained epiphyseal structures. There is possibly a delayed or distorted endochondral ossification.

According to Knaggs<sup>3</sup> these cases show no head involvement but definite epiphyseal enlargements, particularly at the wrists. The epiphyseal lines are broadened and irregular and show a rarefaction extending down the shaft. One frequently observes in the roentgen ray alternating dark and light lines. These are interpreted as stages of recovery and remission, the dark indicating a recovery, the light a remission. Bending of the long bones occurs close to the epiphysis since the process must be one of epiphyseal disorder and at the age incidence the shaft portion is already well developed.

Pathological examination reveals rarefaction of the compact bone. The marrow does not show the marked changes seen in the infantile form. The fat is not completely replaced by connective tissue. There is relatively little osteoid tissue beneath the epiphysis and only occasionally is it observed beneath the periosteum. In severe cases a remarkable degree of rarefaction is seen, to an extent that the compact bone is frayed out into parallel laminae, the absorption occurring along the haversian channels. But this picture is almost that of osteomalacia and does correspond to the findings in experimental osteomalacia. The cases reported, together with their microscopic findings, strengthen the evidence of a definite disorder in the epiphyseal plate occurring at a late stage, usually puberty, which result in bone deformities; but it must be realized that bone is a living tissue and is capable of only certain changes in its structure with many abnormal physiological processes manifesting themselves similarly. Therefore it is justifiable to believe that late rickets is a metabolic disturbance occurring in the physiologically overactive epiphyses of puberty as a result of deficiency factors similar to osteomalacia and infantile rickets. These cases are not as amenable to treatment as the infantile form yet no definite glandular disorder has been proved unless it may be the hyperplasia of the parathyroid as a compensatory process.

So far the conditions considered are those appearing during the active stages of epiphyseal growth and are therefore restricted to childhood. In the adult the related picture is seen in osteo-



malacia. True osteomalacia is probably a deficiency disease although again some would claim a primary parathyroid disease (Funston,<sup>12</sup> Ballin<sup>13</sup>). Under this name one must find a place for hunger osteomalacia, osteomalacia of pregnancy and probably the senile form of osteoporosis. Conflicting evidence is abundant, yet, as will be seen, any conclusions drawn without accurate metabolic studies of calcium balance must be disregarded as worthless. It is due to the inaccuracy or lack of these determinations that the confusion occurs.

Hunger osteomalacia is considered a distinct disease which is no longer prevalent. It occurred during the World War among the food starved of Central Europe. The age incidence was from 40 to 70. The symptoms were difficulty in walking, later pain in the bones of the feet, edema of the feet and ankles graduating up to back pain. Pain occurred on coughing and deep breathing. Many became bedridden. Bone tenderness was limited to the areas of muscle attachments. No pathological studies are reported. The condition was cured with cod liver oil. There is not sufficient evidence to substantiate this as a distinct entity but, rather, a complexity of deficiencies.

True osteomalacia is characterized by softening and flexibility of the bones. It is stated that it can occur at any age. It is most frequent in women during the childbearing period, that is from 25 to 35 years. Occasionally it is seen in men. In elderly people it is called senile osteomalacia. The disease may be complete in one year or may last as long as twenty-four years. Durham's description as stated by Knagg<sup>3</sup> is as follows: "Pain, deep seated, increased by pressure and motion, variable in character, location and constancy; lassitude and fever; and uncertain gait with fear of falling. Pain appears in order in the spine, pelvis and loins. Diminution in stature, deformities of the spine and pelvis; fractures or curvatures on the long bones result." It is aptly called the "back leg" disease. Maxwell<sup>4</sup> from his studies in China feels that the condition should be called adult rickets. Dieckmann<sup>11</sup> believes the condition prevalent in the United States and feels that there is no sharp differentiation between late rickets and osteomalacia. It occurs in 10 per cent of childbearing women in China and from 2 to 3 per cent die during pregnancy. He does not feel that the demand of the fetus is the cause in pregnancy, but probably a close association of puberty and pregnancy during which there are marked glandular changes. Substantiation is found in that there is a negative calcium balance during menstruation and it is difficult to maintain a positive balance during pregnancy. The dietary factor is explainable in the cases in China and India where those women developing the disease have a poor mineral and vitamin diet and no sunlight. It is apparent that osteomalacia is a disease process which occurs in developed or adult bone as distinguished from rickets which occurs in young bone; and one may infer

that any process which disturbs the bone metabolism will result in osteomalacia. This statement requires the qualification, however, that the pathology be of a definite order and it is the latter that will distinguish osteomalacia from osteitis fibrosa cystica and osteitis deformans and again rickets.

There is not evidence substantial enough to warrant believing the condition due to other than deficiency factors or a drain on the calcium content. However, it should not be understood that the bone changes be apparent before the diagnosis is made, particularly in women. Also one must exclude similar conditions of osteoporosis which may develop during hyperthyroidism, diabetes and malignant diseases.

Some of the more common deformities observed are the bending and fracture of the ribs at their midpoint rather than near the ends as seen in rickets, the compression of the pelvis either at the acetabulum or at the pubes, and the curving of the sacrum. The spine shows varied curvatures with marked compression and rarefaction. The long bones show malunion fracture deformities due either to muscle pull or weight bearing on the softening bone. The microscopic picture indicates an osteoporosis extending from the center of the bone toward the periphery. Cavities result which become filled with a peculiar marrow. The calvarium is usually thickened and roughened and suggests an inflammatory reaction of the bone. The diploe increase in bulk and may even push through the external plate leaving bare areas. In the long bones changes occur in the spongiosa around the medulla. The cortical layer becomes spongy, loose and transparent enclosing large reticulated cancellous or naked medullary tissue. The marrow status depends on the duration of the disease. It may vary from an oily viscid fluid to a soft pulp; its color depends on the fat and blood content. Degenerated cysts form but they do not tend to expand the bone nor are they as frequently associated with fractures. Giant cell tumors occasionally occur.

Microscopically there is a disappearance of the osseous tissue rapidly and in great bulk. This absorption does not occur primarily by osteoclasts but rather as a resorption and a replacement by connective tissue marrow cells. The picture may be summarized as follows:

- a. An increased quantity of blood in the bones.
- b. Loss of semitransparency characteristic of healthy bone and the assuming of a granular appearance.
- c. Confusion of lamination with the lacunae and canaliculi enlarging.
- d. Complete absorption of the lime salts at the outermost laminae of the trabeculae.
- e. In compact areas the decalcification advances from the haversian canals which result in decalcified rings.
- f. Decalcification of the matrix which disintegrates and is absorbed.

Table 1. *Metabolic Determinations*

	Osteoporosis	Cysts and Giant Cell Tumors	Pathol. Fract.	Serum		Urine Calcium	Calcium Balance	Parathyroid		Phosphatase
				Calcium	Phosphorus			Tumor	Hyperplasia	
Rickets	Diffuse	Occasional cysts	Occasional	Normal to low	Low	Low	Pos.	Never	No	High
Osteomalacia	Diffuse	Both	Yes with bending	Low	Low	Low	Neg.	Never	Occasional	High
Paget's	Hyperostosis	Cysts	Occasional	Normal or less	Normal	Low	Pos.	Never	Never	High
Osteitis Fibrosa Cystica	Diffuse	Both	Frequent	High	Low	High	Neg.	Pos.		High

g. Destruction of the haversian systems leaving a delicate network of fibers, shreds of membrane and fragments of undestroyed bone.

Knaggs<sup>3</sup> has observed in bone not artificially decalcified a double contour due to the decalcification at the periphery of the trabeculae with the central portion granular and laminated. The decalcifying bone seems to fade into a fine gauze-like fibrillar membrane. Areas suggestive of osteitis fibrosa cystica are seen. Callus when present is calcified only at the periphery of the fracture site. Repair takes place through osteoid tissue formation.

From the foregoing discussion one must conclude that rickets and osteomalacia are not similar pathological processes even though it is questionable whether or not osteomalacia may appear in infants. Clinically both may result in similar deformities, those in rickets being influenced by the developing status of the vulnerable epiphyses. Both are governed by deficiencies in diet and the manner in which these deficiencies influence the body store of calcium. Renal and celiac rickets are clearly different processes with a rachitic end result in the bone; and late rickets must be considered as an osteomalacia process acting on an almost developed bone and epiphysis.

It is not the intention of this paper to discuss the entities of osteitis fibrosa cystica generalis or osteitis deformans since these two have definite characteristic pictures (Jaffee, Compere,<sup>15</sup> Bauer<sup>14</sup>) and only in the presentation of the metabolic studies will they be mentioned. Again only through the metabolic determinations of the group is one capable of the finer distinctions of the lesions considered. These are given in tabulated form.

Although all the evidence is not discussed one should consider that in only one condition, osteitis fibrosa cystica generalis, has a definite etiology based on a tumor of the parathyroid been substantiated. Rickets and true osteomalacia are not involved with tumors of this gland unless by compensatory hyperplasia. They are deficiency diseases. Paget's is a distinct entity of as yet unknown etiology. Renal, celiac and late rickets are distinct diseases with etiological factors different from that of infantile rickets.

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## NONOPERATIVE MANAGEMENT OF REMAINING COMMON DUCT STONES

When a stone is located in the common duct by delayed cholangiography, R. Russell Best and N. Frederick Hicken, Omaha (*Journal A. M. A.*, April 16, 1938), have the patient begin the following three day regimen: On the first day a 1/100 grain tablet of glyceryl trinitrate is placed under the tongue three times during the day; on the second, 1/100 grain of atropine is given either by mouth or hypodermically three times, and on the third the administration of glyceryl trinitrate is repeated. Each morning the patient is given 2 drachms (8 Gm.) or more of magnesium sulfate in warm water and each evening at bedtime one ounce (30 cc.) of olive oil (preferably) or thick cream. The common duct is gently irrigated once a day through the T tube catheter or fistula, with warm physiologic solution of sodium chloride, and after as much of this as possible is removed by syringe or by permitting the tube to drain for five minutes, from 10 to 30 cc. of warm sterile olive oil or lipoiodine is instilled into the common duct. If the patient does not complain of distress, the tube should be clamped off during this course of treatment except for a thirty minute period after each instillation. In order to maintain an increased intraductal pressure, three or four tablets of decholin or procholone are given four times a day. This treatment may be repeated after a few days' rest, and it may be repeated as many as ten times over a period of two months. It may prove rather debilitating at times, and care must be taken not to exhaust the patient.



## ACUTE HEMOLYTIC ANEMIA FOLLOWING TREATMENT WITH SULFANILAMIDE

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A vast amount of literature is appearing emphasizing the toxic effects of sulfanilamide. This fact must be brought to the attention of the physician, the pharmacist and the layman. In our zeal we have used this drug in all kinds of infections and quite often indiscriminately. We can say for the drug at the present time that it has proved of value in infections caused by the beta-hemolytic streptococcus, and that favorable evidence of improvement is found with the meningococcus, gonococcus, the gas bacillus and the colon bacillus, especially in urinary tract infections.

Many patients on sulfanilamide medication complain of a feeling of light headedness associated with a ringing in the ears, headaches, a slight temperature, loss of mental acuity, nausea and vomiting, and often tingling and paresthesia in various areas. Fortunately these are of minor significance and produce no serious results; however, the patient must be watched for more serious complications. The important toxic manifestations are cyanosis, rash, fever, acidosis, optic neuritis and anemia. A case of acute hemolytic anemia is here reported.

### REPORT OF CASE

A while male, aged 50, was admitted to the hospital on September 4 with a severe pain in the right kidney region, diagnosed as ureteral stone or spasm. His urinalysis on admission showed a slightly positive benzidine test, 6 to 8 white blood cells and rarely a red blood cell. A cystoscopic examination by Dr. C. K. Smith revealed findings suggestive of pyelonephritis with pus and blood in the urine. A ureteral catheter was inserted and retained for twenty-four hours. Three days after admission his temperature rose from 98.6 to 104 and he was given two ampules of uritone intravenously with negative results. Two days later, on September 10, he was started on sulfanilamide. At that time his blood count was as follows: Hemoglobin 89 per cent; red cells 4,580,000, white cells 14,500 with 87 per cent neutrophils (37 stabs), and lymphocytes 13 per cent.

The patient received sulfanilamide as follows: September 10, 30 grains; September 11, 40 grains; September 12, 40 grains; September 13, 40 grains, and September 14, 10 grains, total 160 grains.

After the second dose he complained of a dizziness and mental blurring. On September 14 he developed a marked icterus. The icteric index was 28. The sulfanilamide was stopped immediately and 10 per cent glucose in normal saline was given intravenously. The patient became progressively worse and the blood count on September 16 was as follows: Hemoglobin less than 25 per cent, red cells 1,010,000 (note rapidity of fall), white cells 36,900 with 66 per cent neutrophils (26 stabs) and 34 per cent lymphocytes. The icteric index was 20 and the fragility test was normal.

Citrated blood, 500 cc., was given followed by three daily transfusions. Because of the continued elevation of temperature, a ureteral catheter was reinserted on

September 18 but the urinary flow was normal. Blood cultures at this time were sterile.

The patient responded immediately to the transfusions and the blood counts showed a progressive gain. On September 28 he was discharged. His blood count was then as follows: Hemoglobin 72 per cent, red cells 3,640,000, white cells 7050 with 72 per cent neutrophils (10 stabs), 28 per cent lymphocytes. His temperature was 98.6, pulse 80, respiration 20, and the urine showed a slightly positive benzidine test, an occasional pus cell and one or two red cells.

### CONCLUSION

This case illustrates the dangers which may be encountered when sulfanilamide is used. It is therefore the opinion of the authors that the drug should not be used except under strict medical supervision and with frequent blood counts.

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## SULFANILAMIDE IN THE TREATMENT OF PUERPERAL SEPTICEMIA

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In presenting this short paper I do not propose to discuss the drug, sulfanilamide, nor offer a discourse on puerperal septicemia but, rather, call to your attention my experience with the drug in two cases that I have treated recently.

Much has been said in the literature in the last year extolling the virtues of this preparation in the treatment of streptococcal infections. Some writers have gone farther and claimed that it was efficacious in all coccic infections. Some genito-urinary practitioners have advocated its use in gonococcal infections and no doubt it has a place in this field; however, in my limited experience with it I have been disappointed.

In a few cases of streptococcal infection, other than the two puerperal cases I shall report, I believe I have obtained favorable results in a large percentage. My experience with the drug has been rather limited, of course, and I realize that I could not become too enthusiastic from so few cases.

### REPORT OF CASES

Case 1. Mrs. H. A., aged 23, multipara 3, was seen July 14, 1937. The family lived about ten miles from town in an isolated part of the country. As they were strangers to everyone, having lived there a short time, and had no money they thought they would save a doctor bill by not calling a physician. Her last labor was an easy one, the doctor not having time to reach her until after the baby was born. After being in labor for several hours without any results they decided they needed a doctor. After driving nine miles and walking one mile I reached the patient. I found a shoulder presentation with an arm protruding and a dead baby. The mother had evidently been having a terrific labor for she was almost exhausted.

We had no conveniences and no adequate help. After hurriedly preparing ourselves we did the only thing

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we could think of, i. e., a podalic, and delivered the baby. It was not easy to do in this case. I did not make a return visit for various reasons and a week later the man came in and reported that she had fever. On my visit to her I found her with a temperature of 105, a rapid pulse, tender abdomen, complete anorexia and complete cessation of the lochial discharge. After attention to the bowels, temperature, etc., I prescribed sulfanilamide tablets, gr. 5, three tablets every four hours the first day, two tablets every four hours the second day and one tablet every four hours thereafter, the patient taking the tablets only during the daytime or four doses a day. Within seventy-two hours the temperature was normal and the patient went on to recovery.

Case 2. Mrs. S. B., aged 26, primipara, was seen August 4, 1937. This patient had had prenatal care for six months prior to her delivery. She was of short stature and inclined to adiposity. The last three months of her pregnancy she had to pay particular attention to her diet in order to keep down weight and then she gained a good deal more than we would have liked for her to gain. Otherwise everything was fine. I was called after midnight. She had been in labor for several hours. Her progress was slow and after six or seven hours of hard labor we made a forceps delivery without great difficulty. We had some cervical lacerations, not extensive, and little injury to the perineum.

Four days later she had a chill, the temperature reaching 105. There was a foul lochial discharge and a picture of a septic condition. Sulfanilamide tablets, gr. 5, were given, 60 grains the first day, 40 grains the second day and 20 grains a day thereafter. In forty-eight hours the temperature was normal and the patient convalesced nicely thereafter.

In conclusion, it is the writer's opinion that in sulfanilamide we have a remedy worthy of our consideration in coccic infections, and especially in puerperal sepsis.

#### CHEMOPROPHYLAXIS IN POLIOMYELITIS: TECH- NIC OF APPLYING CHEMICAL AGENTS TO THE OLFACTORY MUCOSA

The evidence that a chemical agent such as 1 per cent zinc sulfate confers on monkeys a high degree of resistance against poliomyelitis virus for at least one month after treatment suggests that such a prophylactic measure may deserve a trial in human beings during periods when poliomyelitis is prevalent. Lee Shahinian, J. A. Bacher, R. C. McNaught and R. R. Newell, San Francisco (Journal A. M. A., April 16, 1938), concern themselves primarily with devising a method of applying the prophylactic treatments that can be easily and accurately used by the physician with a minimum of discomfort and risk of injury to the patient. They have roentgen and clinical evidence to show that when the head is completely inverted, with the base line horizontal, limited quantities of fluid introduced slowly into the olfactory sulcus at the limen nasi will flow along the groove and accurately fill the inverted common nasal meatus, in a selective manner, to a height usually sufficient to immerse most of the estimated olfactory area. Previous shrinkage of the nose was found unnecessary. All solutions placed in the nose were found to be better tolerated when previously warmed to body temperature in a water bath. Ordinary medicine droppers, previously calibrated for volume, are used. With a speculum spreading the anterior naris, the tip of the dropper is inserted approximately 0.5 cm. into the naris, at the anterior angle of the nose, without touching the sensitive mucous membrane walls. The fluid is introduced slowly and steadily, drop by drop.

#### PUBLIC HEALTH: THE TRUTH

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It is not my intention to tell you all that is true concerning public health, but I do intend to mention nothing but the truth in what I have to say to you.

Fads and fancies may have something to do with public health but, so far as I am aware, the part they play is to interfere with progress. True progress, says Sextus, consists in bringing forward from yesterday the good of yesterday and adding to the store the good of today. I can see little good in so-called fads, so I shall have nothing to do with them in discussing public health.

Everyone should come to a realization that good health is not a luxury—it is a duty. We have been told that in the battle for what is best the most effective weapon is dissemination of the truth. Therefore, we shall endeavor to confine our discussion of public health to facts known and supported by the profession at the present time. Although we are told in Ecclesiastes 1:9, "There is no new thing under the sun," I am not willing to subscribe to this statement unreservedly for it must be conceded that knowledge is advancing through new discoveries, and new occasions teach new duties. There may be times when ignorance is bliss and perhaps if we know little we may suffer little mentally but through lack of knowledge concerning the prevention of disease we subject ourselves to attack by foes too small to see; we suffer physically and our lives are shortened as a result of exposure to contagion and the elements. The danger is comparable to that which may arise through lack of knowledge of traffic laws.

Facts remain such, despite denial, and no amount of opposition can change the character of truth. "It is not enough to know; we must turn what we know to account. It is not enough to will; we must do," if we expect to escape the dangers to which we may become exposed.

We cannot accomplish much, cannot advance as we should, if we follow the lines of least resistance; that is what makes rivers and men crooked. It pays to go straight. It requires self-denial to be healthy and strong. As expressed in Hambone's Meditations: "De straight en narrow paff sho' ain' no road foh speedin'." Speeding is responsible for much of the illness of the present day. Haste brings waste in many instances for in doing things hastily one is likely to neglect to take the precaution to do them well, quite aside from consideration of the wear and tear on organs that are forced to work under abnormal conditions.

"Living fast" is a metaphorical phrase expressing a literal fact. It is a course by which the candle is consumed at both ends. In mortality reports, disease of the heart heads the list as the cause of

A talk given at the Woodville Church in Holt County, September 12, 1937.



death. Heart disease is frequently the result of traveling through life at too rapid a pace. In many instances worry is brought on through hasty action taken without due deliberation. Strain from worry may affect the heart and bring on fatigue to such a degree that the victim, exposed to germs of disease, becomes readily susceptible to infection.

On the other hand, a happy state of mind does much to safeguard one against infection, extrinsic as well as intrinsic. While it is true, as we are told, that pleasure in work is an indication of sanity, it is foolish to overwork. Overwork brings on exhaustion and lessens our resistance to the invasion of pathologic organisms. However, work is natural and occupation does much to prevent worry. Cowper tells us: "Absence of occupation is not rest; a mind quite vacant is a mind distressed." To quote an English poet: "To cure the mind's bias, spleen, some recommend the bowling green; some hilly walks—all exercise. Fling but a stone—the giant dies."

Exercise is necessary to keep all organs functioning normally. Exercise of both mind and body along normal lines of endeavor leading to the advancement of the human race mentally, physically and spiritually should be the aim of everyone. It is not the bad men who are to be feared so much as the good men who think wrongly. Environment has much to do with one's thinking and if it is not what it should be may lead him from the path of rectitude as well as endanger him from contagion. The environment being good its results should be uplifting; it should lift the individual from the slums of despond enabling him to take hold of life with a clear insight as to that which is good.

Goethe tells us, "If you would create something, you must be something." Such being the case, "Do not loiter nor shirk, do not falter or shrink; but just think out your work, and then work out your think." If you think aright you are likely to see aright: "'Two men looked from prison bars; one saw mud, the other stars.' So, amid the confused restlessness of modern life, our wearied mind dreams of simplicity," says one author. This need not be taken to mean that we are to avoid all the pleasures of this life, but it should be our endeavor to rise above the senseless seeking for stimulation which drives the common mob and to avoid the cheap excitements which lure the rabble.

Seek diligently and you shall find the environment suitable for your advancement and welfare. In searching for that which is best for you as in mountain climbing, the ascent of each higher peak unfolds a wider vista. So in searching for knowledge which will enable us to better our condition physically and mentally—yea spiritually—we come into possession of facts representing accumulated knowledge, pile upon pile, until finally we discern many things heretofore unseen and unknown. By such stages has medical science risen to the point where it is enabled to save the lives of many who, a few years ago, would have been destined to die.

Some persons are led to believe that the only hope for salvation lies through prohibitions—"Thou shalt not," "Don't," etc. What we really need in this present day is constructive suggestions that will help us live good, useful, sensible lives, instead of "covering with mists the sources of truths and circumscribing their influence." We cannot become skillful drivers merely by becoming expert at putting on the brakes. We should first learn our machine and how to manage it. Rushing blindly along the highway, without taking notice of the signs warning us of the dangers to be encountered, is sure to result in trouble. Too many, as a result of failure to equip themselves with proper knowledge, crowd on the brakes or throw up their hands when an obstacle appears in front of them. They become perfectly helpless, owing to the fact they have not learned to steer their vehicle properly. Then if an accident occurs they blame the world.

So it may be in the prevention of disease. Instead of taking advantage of opportunities to safeguard the health, people rush along recklessly and blindly, giving little thought to the condition of the machine they are driving or the obstacles to be met in their haste to get somewhere. Finally, the engine begins to miss or they have a blowout that puts them off the road. If you would make the grade you must be square with your engine; see that it is supplied with proper fuel and under proper control at all times. Being square with your engine means more than supplying it with fuel, however. It means living in such a way that your motive power is not lowered through excess of any kind. That is "right living."

Before attempting to direct others, one should himself know the way. Harm frequently comes from accepting suggestions as to the course to pursue, when the one suggesting has little or no knowledge of the subject. Such a one becomes an impediment to advancement. He knows not that he knows not, or else is willfully deceiving the one whom he would direct. In either case, the individual accepting his advice is led astray. Too often is advice given for the purpose of leading the recipient to believe that he is receiving a favor. Such advice, though given gratuitously, is worth less than it costs. Again, the donor would have the recipient believe that he possesses superior intellect and is qualified to give advice to his fellow. This seems to take place more frequently with those who would tinker with the human machine than in any other field. While the "innards" of an automobile may be replaced with new parts when burned out or broken, the parts of the human machine when destroyed cannot be replaced with others and made to go. There is no sphere in which a little learning is so dangerous as in treating the sick, and no humbug so pernicious as one who misleads others into thinking him capable of treating them when he is not qualified to do so. George Elliot tells us, "Ignorance is not so damnable as humbug; but when it prescribes pills it may happen to do more harm."

In suggesting treatment, there is to be considered the fact that man's condition may not be the same from day to day since it is influenced by his environment, the food he consumes, his mental state, etc. This being the case, how is one to treat the patient successfully without knowing how these changes may affect him?

Much harm comes from the so-called educational short courses—short-cuts—to secure a degree. Such education produces unscrupulous individuals who are more concerned with "doing" than with doing for the public. If a stranger with an unusual personality appears in a community and hangs out a sign, "Doctor," the residents rarely go to the trouble of inquiring, "Whence come you?" They spend their money and risk their lives with the stranger without bothering to learn anything concerning his qualifications for the work at hand, and give little thought to the school from which he obtained a diploma. Yet in selecting a teacher for the school to which they send their children they make the applicant show his credentials, ask for recommendations from his former employers and lay great stress upon his college degrees. Surely the matter of health should be just as important, for a healthy mind cannot exist in an unhealthy body. Before one is entrusted with care of the human machine he should fully understand the intricacy of each working part, the relation of one part to another, the proper fuel requirement and the means by which the ash is removed from the furnace as well as the best method of ejecting the clinkers should the outlet become choked.

Before employing one to care for an ordinary engine we require him to know his stuff that we may feel secure against an explosion. Yet many people who take precautions in simple things take no precaution to safeguard the health. An unlearned person is not aware of the dangers of carelessness in treating the sick. In many instances the contraindication is greater than the indication for the use of a remedy, yet the fool or ignoramus will continue to dose himself, or others who permit him to do so. A little learning may lead one to prescribe something which is positively injurious to another.

Yes, a little learning is dangerous when the possessor fails to understand or knows not that he knows not and, perhaps cares not. To illustrate some of the dangers which may follow in the wake of ignorant practice let me direct attention to what may seem a simple matter, the fitting of spectacles. It is not uncommon for people to go to the 10 cent or some other store and select glasses, or have them selected by an ordinary clerk. These glasses, of course, magnify any reading matter and the buyers think themselves, or perhaps their child, properly fitted because the letters they are reading show up more plainly. They fail to take into consideration, do not know, the part the muscles of the eye play in an effort to read. They do not know that there are errors of refraction to be corrected. They do not

realize that positive injury to the eyes may follow the use of unsuitable glasses. This injury may become irremediable if ill-fitting lenses are kept before the eyes too long. The victim is not aware that the case of "nerves" from which he or she may be suffering is the result of wearing unsuitable glasses. To carry the inquiry further, we will probably find that if the individual is nervous he decides that he should have someone's nerve to quiet his nerves—to make him rest. If he suffers from headache—still with no thought of its real cause in the eyes—he takes a headache tablet.

So much depends upon seeing things aright that great care should be taken to prescribe suitable glasses when errors of refraction exist, or when eyes are weak from strain or otherwise. No tyro should ever be trusted to fit the individual with lenses. Such a delicate adjustment should be made by an expert oculist who thoroughly understands the pathology or condition to be corrected. Ophthalmologists are to be found in the larger towns and the state provides clinics for those who are unable to visit the larger centers, so it is foolish and unnecessary to endanger your vision by procuring spectacles from traveling venders and at 10 cent counters, or from mail order houses.

What is true concerning the eye is equally so of other organs of the body. Why take chances with hand-me-downs (patent) medicines instead of having a thorough physical examination by one competent to give it?

We are told by Newsholme: "The three main objects of public health work are: (1) The prevention of disease; (2) the enhancement of health; (3) the cultivation of the complete being of man in order that physically, mentally and morally there may be the highest self-development of a well-balanced nature." Says Rosenau: "Let us not forget that the entire child goes to school—body, soul and mind. Any system of education which ignores one or the other of these factors will be to the disadvantage of the child."

It seems that the public has still to be educated to an appreciation of intellectual values and to deliverance from the superstitions of a crude commercialism as the ruling principle of life. It is poor investment, no matter how little the cost, to spend money for instruction which does not instruct. This is especially so when the health of the individual is at stake. "Health is wealth," so it is said. Why throw away your health by entrusting your body to the care of those who know not? Your automobile will be of no further use to you when you are dead, yet it is unlikely that you would employ one without knowledge of mechanics to overhaul your automobile or to make adjustments for the control of the machine.

The observing teacher or school nurse may note the outstanding symptoms of faulty vision, impaired hearing, adenoids, St. Vitus' dance, epilepsy, feeble-mindedness and a few other ailments. She may realize the seriousness of the symptoms, but it



is only the physician who can interpret them correctly; for symptoms alone may mean much or little. Like symptoms may arise from different causes. It is necessary to know their origin and the physical makeup of the individual in order to make a correct diagnosis and to undertake the proper treatment.

The fact of the matter is that there is no fixed, permanent state in the organic world. Everything is in condition of perpetual change. What is true respecting an individual at one time is not true at another. Any plant or animal is constantly changing and it is obvious to the unbiased observer that man's battle against disease and unfavorable environment is, and indefinitely will continue to be, active and unceasing. Casualties will occur and must be cared for and it is the physician who must meet the problem.

Industrial concerns have learned from experience that it pays to keep their employees well and happy. To accomplish this, they employ persons skilled in industrial medicine, human engineering, whose duty consists in the examination of employees at regular intervals to ascertain their physical and mental condition. If either is found faulty it may be corrected before there is a breakdown. The human engineer goes even further than this for it becomes his duty to look after the environment of the individual and to give him instruction on how properly to take care of the human machine so that it may continue to operate instead of being relegated to the scrap pile.

This human engineering is an outgrowth of the study of preventive medicine, or public health, so-called.

It seems to me that the question of public health is second in importance to no question before the people today. It offers a wonderful field for evangelistic work. It has been well discussed by public health workers from a bacteriological standpoint but it yet remains to be taken up by men in the pulpits, by men who preach Christ and Him crucified, and proclaim, "Suffer little children to come unto me." They may do a great good to humanity by making known to the masses that real happiness comes through good health, that disease and disharmony may be prevented by clean hearts, clean thoughts and clean habits. For it is by these agencies that our lives become tranquil, stable and, in a sense, free from worry and anxiety. It is these latter influences which do so much to lower the resistance of the body and thereby invite the invasion of bacteria by which dysfunction is brought about causing death, suffering and poverty.

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Glenn Major, Pittsburgh (Journal A. M. A., April 16, 1938), describes for the gradual reduction of horizontal fractures of the maxilla principles of skeletal traction and a Kirschner wire. It effects gradual and complete reduction; the apparatus can easily be applied with the patient under local anesthesia, and there is little possibility of additional intracranial injury or infection, because of the gradual reduction.

## UNUSUAL CASE OF FISTULA IN ANO

JOHN S. POE, M.D.

ST. LOUIS

Although fistula in ano is a common ailment, and although fistulae associated with childbearing are no medical curiosity, I have been unable in the admittedly meager references consulted to find described a case similar to the one recorded here. This is a case of fistula in ano occurring in the suture line of an episiotomy wound shortly after delivery. In spite of being a warm advocate of episiotomy I hope this case will serve as a warning against a possible danger of this procedure in obstetrical surgery.

### REPORT OF CASE

**History:** Slightly more than two years ago the patient was delivered of a living, 7 pound, 3 ounce male infant in one of the leading local hospitals by a physician who confines his practice to obstetrics and gynecology. Delivery was effected by perineal forceps over a right mediolateral episiotomy; there was no further laceration. Repair was carried out and the patient sent to her room in good condition. Although the patient complained of considerable distress in the wound during her stay in the hospital, apparently there was no reason to think anything amiss. Approximately one month following the birth of the child the patient began to experience pain in the episiotomy wound; she then noticed that it was red and swollen in its posterior portion. In two days the lower aspect of the wound broke open and began to drain. With treatment the wound healed again and the patient was assured that everything was all right. Ever since then the wound has remained tender and on numerous occasions has drained.

**Examination:** Patient is a well nourished and well developed white matron, 26 years old, gravida 1, para 1, of asthenic habitus. General physical examination is essentially negative.

Examination of the genitalia reveals a normal multiparous outlet, the perineum has good support, the uterus is forward in good position and the adnexae are clear. There is a right mediolateral episiotomy wound which is well healed in its superior portion, but showing in its posterior portion a mass about .5 cm. in diameter, roughly spherical, slightly tender and red. Located in an eccentric position piercing the mass is a small opening about 1 mm. in diameter. Palpation within the rectum reveals the presence of a similar mass situated about 1 cm. from the mucocutaneous line at the closest point to the lesion upon the skin. Pressure upon the mass within the rectum causes the exudation of fluid from the opening in the skin; furthermore it was possible to pass a probe through the opening.

A fistula of this type caused, in my opinion, by a stitch through the rectal mucosa at the time the episiotomy wound was repaired has never been observed by me, nor do I find reference to any similar case in my references. In any case, I believe that an incident of this sort if remembered will remind all of us who have occasion to repair perineal wounds to make rectal palpation following such repair a part of our routine treatment.

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MAY, 1938

## EDITORIALS

### JEFFERSON CITY SESSION

The Jefferson City Session will convene on May 2, 3 and 4. Scientific sessions and the meetings of the House of Delegates will be held in the House Chamber of the Capitol Building. The Council will meet at lunch on Monday at the Missouri Hotel and on Wednesday in the House Chamber of the Capitol.

There is a great deal of business to be taken up by the House and Council and an excellent scientific program has been arranged. Committees of the Cole County Medical Society, under the chairmanship of Dr. Irl B. Krause, have arranged interesting entertainment. In all the Session promises to be outstanding and it is hoped that many members will attend and take part.

The program for the Session appeared in the April issue of THE JOURNAL. Governor Lloyd C. Stark will be a guest and give the address of welcome. Dr. J. H. J. Upham, Columbus, Ohio, President of the American Medical Association, and Dean of the Ohio State University College of Medicine; Dr. George M. Curtis, Columbus, Ohio, Research Professor of Surgery, Ohio State University College of Medicine, and Dr. Palmer Findley, Omaha, Nebraska, Charter Member and First President of the Central Association of Obstetricians and Gynecologists, will give scientific addresses. Dr. Findley will also speak at the Maternal Welfare Dinner on Monday evening.

All who have participated in preparations for the Session feel that it will be worth while and hope that a large number will attend to assist in its success.

### TOBACCO AND THE ELECTROCARDIOGRAM

During the last two or three decades there has been a considerable increase in the consumption of tobacco in this country, chiefly in the form of cigarettes. In 1910, approximately seven trillion cigars and seven trillion cigarettes were smoked. By 1934, cigar consumption had dropped to some five trillion but cigarette consumption had increased to

116 trillion. How widespread cigarette smoking has become may be realized from the fact that the latter figure is equivalent to that which would obtain if every individual in the country over 15 years of age smoked about two and one third cigarettes each day. The period of time during which this tremendous increase in the use of tobacco has taken place has been too short to afford conclusive evidence of its effect upon health and well-being.

True, there have been occasional patients in whom abdominal and circulatory symptoms have been relieved by the exclusion of tobacco. Incontrovertible evidence has accumulated that smoking is attended by spasm of the peripheral arteries and consequent lowering of the temperature in the extremities. Tobacco has been accused as the provocative agent in the production of angina pectoris in impressive series of case studies. No sooner is such a case study off the press than another equally impressive makes its appearance and equally strikingly supports the conclusion that smoking plays no part in the development of the anginal syndrome. It is of utmost importance to know, in view of the increasing incidence of coronary artery disease, whether tobacco smoke which daily diffuses throughout the body of so many Americans, is a cumulative poison or whether the habit may be dismissed as a harmless pastime.

For the country as a whole the annual death rate for angina pectoris increased from about 4 per cent per 100,000 persons in 1910 to about 12 in 1934. Of much more significance in this regard are the carefully collated statistics of a small American community<sup>1</sup> in which the death rate from diseases of the coronary arteries was approximately 4 per 100,000 in 1910. The incidence of this syndrome increased rapidly until in the period between 1930 and 1934 it was 95 and in the single year 1935, it was 157 per 100,000 of population. These statistics are not to be compared with those relating to the increasing consumption of tobacco. Any conclusion derived from the simple correlation of these two sets of statistics is bound to be specious and utterly unscientific; it would be represented in the *post hoc, ergo propter hoc* type of syllogism which is thoroughly to be deplored. The figures are cited merely as an indication of the importance of further research which will tend to elucidate the preventive aspects of the puzzling question thrust upon the profession by the increasing incidence of the coronary artery disease syndrome.

Individual patients often describe bizarre symptom complexes which they associate with smoking. Graybiel, Starr and White<sup>2</sup> puzzling over subjective circulatory phenomena induced by smoking were led to examine forty-five persons. They searched for evidence of circulatory disturbance inaugurated by the inhalation of the products resulting from the

1. Dublin, L. I., and Lotka, A. J.: Twenty-Five Years of Health Progress, Metropolitan Life Insurance Co., New York. 1937. P. 271.

2. Graybiel, A.; Starr, R. S., and White, P. D.: Electrocardiographic Changes Following the Inhalation of Tobacco Smoke, Am. Heart J. 15:89, 1938.



combustion of tobacco. While nicotine is generally held the most toxic agent so generated the question is by no means settled and there is some probability that pyridine bases and other complex organic substances are equally at fault.

Thirty-four of the forty-five subjects tested were presumably normal, the remainder having various types of heart or circulatory disease. That thirty-seven of the forty-five were confirmed tobacco addicts again illustrated the extent of smoking in this country. After inhaling, thirty-nine of these subjects showed an increase in heart rate which averaged thirteen beats per minute. Three fourths of them showed an increase in blood pressure which averaged 13 mm. Hg. systolic and 7 mm. Hg. diastolic. These are well known cardiac reactions to the inhalation of tobacco smoke. The significance of the present study lies in the electrocardiographic tracings made during the act of smoking.

Twenty of these forty-five test subjects showed "significant electrocardiographic changes other than variation in the heart rate." Of these seventeen were heavy smokers. The commonest distortion of the electrocardiographic complex was a diminished amplitude of the T-wave, in some cases amounting to actual inversion. In at least two individuals in the third decade of life these changes were so marked as to have led to an unqualified diagnosis of myocardial damage had the tracings been examined without regard to the conditions of the experiment. Cessation of smoking was followed by the reappearance of the normal electrocardiographic complex.

Graybiel and his collaborators are inclined to consider nicotine the toxic agent since approximately 2.0 milligrams were absorbed during the smoking of each cigarette. If this be true the physiological mechanism of the effect is in doubt. The primary action of nicotine is paralysis in the synapses of the ganglia of the parasympathetic nervous system. Atropine, which acts by paralysis of the myoneural junction of the parasympathetic nervous system, when injected into susceptible subjects studied by Graybiel, et al., produced electrocardiographic changes indistinguishable from those following the inhalation of tobacco smoke. Regardless of the exact explanation which may ultimately be accorded this perversion of cardiac mechanism the constance with which distortion of the electrocardiographic tracing follows upon smoking is of the utmost significance.

In view of the fact that certain patients showing the anginal syndrome in the presence of diminished myocardial reserve but without disease of the coronary arteries are freed of their attacks by omitting tobacco it may be that a constituent of tobacco smoke has a direct toxic action on the myocardium itself. The further studies of Graybiel must be awaited with interest. In the meantime attention may again be focused upon tobacco as an etiologic agent in the clinical manifestations of the coronary syndrome.

## THE VALUE OF SPECIFIC FOODS

Spinach is certainly the most talked about member of the vegetable family. It is the only foodstuff which, to our knowledge, has found itself an enduring place in the comic section intended for the edification of the adult. More than an ordinary amount of scientific probing has been done to determine its nutritive value. Despite the fact that no special virtues have been demonstrated to be inherent in this green, it continues to retain an undeserved favoritism. While there is about it nothing that is not duplicated in many other vegetables, children and their parents are still threatened, cajoled or bribed into eating their daily ration. Hence it is gratifying to learn that although it may not be specifically beneficial it is at least not harmful.

Schultz, Morse and Oldham<sup>1</sup> used very young infants to determine the effect of spinach feeding on gastro-intestinal motility and mineral retention. During the experimental period all the infants grew normally. They retained nitrogen and all the eight minerals investigated in the same amount as during the control periods. This positive balance was maintained whether the spinach was dried, pureed or raw. Popular insistence notwithstanding, the retention of iron was no greater during the spinach feeding periods than during the control periods. In these very young infants gastro-intestinal motility was not influenced either by feeding spinach or a powdered, food free, inert fiber.

Somewhat older children served as subjects for Davis<sup>2</sup> who determined the effect of acid and alkaline diets upon nitrogen and mineral retention. These children were exposed to all the beneficial effects of spinach since they received 200 grams of it each day, a sizeable dose. No specific benefits were demonstrated to accrue from the administration of these two diets of widely varying hydrogen ion concentration although the nitrogen balance was distinctly greater with the alkaline than with the acid diets. Davis' most significant contribution consists in the demonstration of the delicate physiological mechanism which enables the organism to choose or reject at will from the available food supply. The relative hydrogen ion concentration of the diet was quite unimportant provided only that the nutrients essential to optimal well-being were ingested in adequate amounts. For example, on the acid as contrasted with the alkaline diet much more of the calcium found its way out of the body through the urine than through the stool, the balance remaining the same. Obviously the lessened supply of alkali prevented the formation of insoluble calcium soaps, permitted absorption of more calcium. Finding no need for more of this mineral, since it was always ingested in amounts sufficient to meet metabolic requirements, the body permitted its excretion through the kidneys. The dis-

1. Schultz, F. W.; Morse, M., and Oldham, H.: Vegetable Feeding in the Young Infant, *Am. J. Dis. Child.* **46**:757, 1933.

2. Davis, M. J.: Calcium, Phosphorus and Nitrogen Retention of Children, *Am. J. Dis. Child.* **49**:611, 1935.

tribution of phosphorous in the excreta was not affected by the chemical reaction of the diet. In the matter of the failure of nitrogen retention on the acid diet, objection may be raised to the results on the ground that the experimental period may have been too short to reflect the periodic variations in metabolic retention

These experiments of Davis prove nothing, either for or against spinach, although the experimental subjects are described as having given "enthusiastic cooperation," even as eating it avidly.

Now comes a disturbing note calculated to unsettle the most complacent adviser who would inflict spinach upon an unsuspecting public. Spinach contains about 700 milligrams of oxalic acid per 100 gram (average) serving. Oxalic acid is a definite tissue poison, may even produce death. Hence it seemed reasonable to suppose that if spinach constituted a daily dietary constituent over a sufficiently long period of time toxic reactions from the contained oxalic acid might become manifest. Children served Bonner<sup>3</sup> and his collaborators as experimental subjects to investigate this possibility. One child took a serving of this vegetable every day for a month. The ingestion of this large amount of green made no detectable difference in his well-being or growth or happiness.

Bonner's experiments are carefully conceived, meticulously executed. His children suffered no disturbance of calcium, phosphorous or nitrogen balance whether or not spinach formed a part of the diet. Even the administration of oxalic acid in amounts equal to those found in the spinach supplement produced no alteration in the balance. While the spinach increased the bulk of the feces it did not affect the gastro-intestinal motility. In other words, these studies prove that like many other vegetables spinach may be included in the diet. It possesses no specific or inherent virtue. There is no reason to insist upon its ingestion at regular intervals.

Experiments of the type here discussed serve only to reemphasize the importance of paying attention to the whole dietary intake in planning the daily menu. The normal body has tremendous selective powers. It should be supplied with all the constituents of an optimum diet and left to utilize what it will from the foodstuffs provided. No one food in a particular class is more valuable than other members of that same general class. Chemical as well as biologic experiment has conclusively demonstrated that foods of each generic type are essentially similar, may be freely substituted, one for another.

3. Bonner, P.; Hummel, F. C.; Bates, M. F.; Horton, J.; Hunscher, H. A., and Macy, I. G.: The Influence of a Daily Serving of Spinach or Its Equivalent in Oxalic Acid Upon the Mineral Utilization of Children, *J. Pediat.* 12:188, 1938.

### CORRECTION OF MINUTES

In the minutes of the 1937 Annual Session printed in the July issue of *THE JOURNAL* the motion con-

cerning the terms of Councilors was misstated. The original minutes read: "Since the even numbers go out now I would suggest that the even numbers be elected for two years and the odd numbers be elected for one year. (Vote on the motion, carried.)" Therefore the terms of the Councilors of the odd numbered districts will expire with the Jefferson City Session.

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## NEWS NOTES

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Dr. James R. Elliott, Kansas City, was a guest of the Labette County (Kansas) Medical Society on March 23 and spoke on "The Treatment of Arthritis."

Dr. Andy Hall, Jr., St. Louis, was a guest of the Madison County (Illinois) Medical Society at Granite City, Illinois, on April 1, and spoke on "Transurethral Prostatic Obstruction."

The Trudeau Club of St. Louis met April 7 at the St. Louis Medical Society Building, St. Louis. Dr. M. F. Arbuckle, St. Louis, spoke on "Bronchoscopy, an Aid in Diagnosis and Treatment of Pulmonary Infections."

The fourth annual session of the American Neisserian Medical Society will be held in Washington, D. C., on May 16 and 17 in the Public Health Auditorium. Dr. Perrin H. Long, Baltimore, Johns Hopkins Hospital, will deliver the principal address.

Drs. August A. Werner and Lawrence M. Riordan, St. Louis, were guests of the Williamson County (Illinois) Medical Society at Herrin, Illinois, on April 5. Dr. Werner spoke on "The Relationship of the Anterior Pituitary and Gonads in the Female," and Dr. Riordan spoke on "Eclampsia."

The "Golfers Special" to San Francisco, sponsored by the American Medical Golfing Association, includes a six day ocean voyage from New York to New Orleans, sailing on June 1. The first game of golf will be played in New Orleans on June 7, followed by four games on excellent courses on the trip out, with stops and sight-seeing at Houston, Galveston, San Antonio, Los Angeles and Del Monte, California. The 24th Tournament of the A. M. G. A. will be held at the San Francisco Golf and Country Club on June 13 as a thirty-six hole annual competition. The return journey of the "Golfers Special" will be through Portland, Seattle, Vancouver, Lake Louise and Banff, with two additional games of golf, more sight-seeing and a steamship voyage up Puget Sound.



The Chicago Tumor Institute, Chicago, a non-profit organization which proposes to conduct research on the causes, diagnosis and treatment of cancer, to instruct and assist physicians, surgeons, clinics and hospitals in the diagnosis and treatment of cancer and to train cancer specialists, opened March 21. The institute is equipped with research laboratories and modern roentgen ray equipment including two machines of medium voltage and two of the supervoltage type. The institute will have at its disposal eleven grams of radium, ten of which will be used in the form of a radium bomb. Dr. Max Cutler, Chicago, is director.

Dr. H. I. Spector, St. Louis, on invitation from the Kansas State Medical Society, the Kansas State Board of Health and the Kansas Tuberculosis and Health Association, lectured to the medical societies in several cities of Kansas on "Symptoms, Diagnosis and Differential Diagnosis of Early Pulmonary Tuberculosis." He was the guest of the Leavenworth County Medical Society on April 18, of the Franklin County Medical Society in Ottawa on April 19, of the Labette County Medical Society in Parsons on April 20, of the Sedgwick County Medical Society in Wichita on April 21, and of the Central Kansas Medical Society in Russell on April 22.

The following members accepted invitations of the Postgraduate Committee to deliver addresses at recent meetings of component societies and lay meetings:

Dr. G. V. Stryker, St. Louis, was a guest of the Jasper County Medical Society at Joplin on March 22 and spoke on "Syphilis."

Drs. A. R. McComas, Surgeon; E. Lee Miller, Kansas City, and Dudley S. Conley and M. Pinson Neal, Columbia, presented addresses on "Appendicitis" on March 23 under the auspices of the Fifth Councilor District in Syracuse, Tipton, Fortuna, Clarksburg, Russellville, Centertown, Jamestown, California, Stover, Gravois Mills, Versailles, Eldon, Eugene, Tuscumbia, Iberia, Brumley and Osage.

On March 25, Drs. M. F. Arbuckle, Dan Meyers and Adrian Blades, St. Louis, were guests of the Greene County Medical Society at Springfield. Dr. Arbuckle spoke on "Bronchoscopy as an Aid in the Diagnosis and Treatment of Pulmonary Disorders," Dr. Meyers on "Medical Treatment of Bronchiectasis" and Dr. Blades on "Surgical Treatment of Lung Abscess."

Drs. John W. Williams, Jefferson City, and Richard L. Sutton, Kansas City, were guests of the Mercer County Medical Society on April 5 at Princeton and addressed a lay audience on "Syphilis."

The Randolph-Monroe County Medical Society had as its guest on April 12 at Moberly Dr. G. V. Stryker, St. Louis, who discussed "Syphilis."

The Buchanan County Medical Society had as guests at the St. Joseph Clinical Society on April 13 and 14 at St. Joseph, Drs. Hugo Ehrenfest, Ernest Sachs, Rogers Deakin and R. B. Alexander, St. Louis.

Drs. E. Lee Miller, Kansas City; Avery A. Drake and A. S. McFarland, Rolla; A. R. McComas, Surgeon; W. H. Breuer and Emil A. Stricker, St. James; Dudley S. Conley and M. Pinson Neal, Columbia; Frank G. Mays, Washington; Ross A. Woolsey, St. Louis, and Leslie Randall, Licking, presented addresses on "Appendicitis" on April 11 under the auspices of the Ninth Councilor District. Lectures were given before approximately 5000 high school students in Rolla, St. James, Steelville, Cuba, Bourbon, Bland, Owensville, Vienna, Dixon, Crocker, Richland, Waynesville, Newburg, Salem and Licking.

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

#### The Drug Products Co.

Hyposols Sodium Cacodylate,  $\frac{3}{4}$  grain (0.048 Gm.), 1 cc.

Hyposols Sodium Cacodylate,  $1\frac{1}{2}$  grains (0.10 Gm.), 1 cc.

Hyposols Sodium Cacodylate, 3 grains (0.194 Gm.), 1 cc.

Hyposols Sodium Cacodylate, 5 grains (0.324 Gm.), 1 cc.

Hyposols Sodium Cacodylate,  $7\frac{1}{2}$  grains (0.5 Gm.), 5 cc.

#### Eli Lilly & Co.

Sulfanilamide Tablets,  $7\frac{1}{2}$  grains

#### Parke, Davis & Co.

Tablets Sulfanilamide,  $7\frac{1}{2}$  grains

The American Express Travel Service is cooperating with societies in a "See America" route to and returning from the San Francisco American Medical Association Session. The "See America" movement by deluxe special trains has been endorsed by approximately twenty-five of the state associations. It presents an opportunity for members and their families to join with their colleagues from other states and enjoy the facilities and service of deluxe trains and visit the many scenic attractions in the western states. The tour includes an Indian detour in New Mexico, the Grand Canyon of Arizona, Los Angeles and the beauties of Southern California, Santa Catalina Island, the famous Columbia River Highway in Oregon, Seattle, Victoria in Vancouver, Lake Louise and Banff in the Canadian Rockies, Yellowstone National Park, Colorado Springs and other places. The all-inclusive price is unusually low because of the coopera-

tion of so many medical societies. A folder describing these travel arrangements may be obtained through the Secretary's office or the transportation agents, the American Express Travel Service, 1010 Locust Street, St. Louis, or 907 Walnut Street, Kansas City.

The program of the Spring Conference of the St. Louis Clinics to be held in St. Louis May 23 to 28 has been completed. Several symposia appear on the program this year on subjects of particular interest to practitioners at this time. The program covers the entire field of medicine, surgery and the specialties, and includes a discussion of the more recent activities in medicine. The program will be strictly clinical and will be given entirely by members of the medical profession of St. Louis and medical officers of the Army and Navy. Medical Reservists of the Army and Navy are urged to attend by the Headquarters of the Seventh Corps Area. The regular enrollment fee of \$10 is waived for reserve officers but a fee of \$2.50 will be charged to cover the cost of a dinner honoring the Corps Area Commander and incidentals. Appropriate military credits will be given for attendance. For further information address the St. Louis Clinics, 3839 Lindell Boulevard, St. Louis.

## MISCELLANY

### AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

The following amendments with the exception of the amendment to Article V of the Constitution were introduced at the last Annual Session. All amendments are to be acted on at the 1938 Session. The amendment to Article V of the Constitution was introduced at the meeting of the Council on November 5, 1936.

#### Amendments to Constitution

Amend Article IV entitled "Composition of the Association" by adding between the words "societies" and "who" of said article the following words "to which only white physicians shall be eligible" so that when amended said section shall read:

#### ARTICLE IV—COMPOSITION OF THE ASSOCIATION

This Association shall consist of members who shall be members of the component county medical societies to which only white physicians shall be eligible who have been certified to the headquarters of this Association, and whose dues and assessments for the current year have been received by the Secretary.

Amend Article V by striking out "(1)" and the words "and (2) the officers of the Association enumerated in Section 1 of Article IX of this constitution" and adding one new section so that when amended said article shall read:

#### ARTICLE V—HOUSE OF DELEGATES

SECTION 1. The House of Delegates shall be the legislative body of the Association and shall consist of del-

egates elected by the component county societies. The officers of the Association as enumerated in Section 1, Article IX, of this Constitution shall have the right to attend all meetings of the House of Delegates and all other rights of delegates in such meetings except the right to vote.

SEC. 2. The officers of the House of Delegates shall be a Speaker and a Vice Speaker elected by the delegates from their body. The Secretary of the Missouri State Medical Association shall be the Secretary of the House of Delegates.

Amend Section 1, Article IX—Officers, by inserting after the word "Treasurer" the words "Speaker and Vice Speaker of the House of Delegates" so that when amended said Section shall read:

#### ARTICLE IX—OFFICERS

SECTION 1. The officers of this Association shall be a President, a President-Elect, three Vice Presidents, a Secretary, a Treasurer, a Speaker and a Vice Speaker of the House of Delegates and ten Councilors.

Amend Section 2, Article IX—Officers, by inserting after the word Council at the end of the fifth line the following sentences: "The delegates present from each Councilor District shall meet on the morning of the third day of the Annual Session and elect the Councilor from that District. In the event of death, resignation or removal of any Councilor, the Council may appoint a successor to serve until the vacancy is filled at the next Annual Session. No Councilor shall be eligible to serve more than three consecutive terms. All of the officers shall serve until their successors are elected and installed," so that when amended, Section 2, Article IX, shall read:

SEC. 2. The officers, except the Councilors, shall be elected annually. The terms of the Councilors shall be for two years; one half the members of the Council shall be elected each year. The Secretary and the Treasurer shall be elected by the Council. The delegates present from each Councilor District shall meet on the morning of the third day of the Annual Session and elect the Councilor from that District. In the event of death, resignation or removal of any Councilor, the Council may appoint a successor to serve until the vacancy is filled at the next Annual Session. No Councilor shall be eligible to serve for more than three consecutive terms. All of the officers shall serve until their successors are elected and installed.

#### Amendments to the By-Laws

Amend Section 4, Chapter III, by striking out the word "President" and inserting the word "Speaker" and by inserting after the word "resolutions" the words "on majority vote of the House of Delegates" so that when amended said Section 4 shall read:

SEC. 4. From among members of the House of Delegates the Speaker shall appoint Reference Committees to which reports and resolutions on a majority vote of the House of Delegates shall be referred as follows:

Reference Committee on Amendments to the Constitution and By-Laws.

Reference Committee on Resolutions.

Reference Committee on Miscellaneous Affairs.

Reference Committee on Medical Education and Public Welfare.

He shall also appoint a Committee on Credentials and such other committees as may be considered by him to be necessary.

Amend Section 1, Chapter IV, by striking out the word "President" and inserting the words "Speaker of the House of Delegates" in the first line and the words "each candidate for Councilor must be a resident of



the District for which he is nominated" and by striking out the last sentence, "On the adoption of this section the nomination of the President for the succeeding year shall be made from the floor of the House," so that when amended said section shall read:

#### CHAPTER IV—ELECTION OF OFFICERS

SECTION 1. The Speaker of the House of Delegates on the first day of the Annual Session shall select a Committee on Nominations consisting of ten delegates, no two of whom shall be from the same Councilor District. The Committee on Nominations shall report the result of its deliberations to the House of Delegates in the form of a ticket containing the name of one member for each of the offices to be filled at that Annual Session excepting the President-Elect who shall be nominated from the floor of the House of Delegates.

Amend Section 1, Chapter V, by adding after the word "delegates" in the third line the words "until its Speaker is chosen" so that when amended Section 1, Chapter V, shall read:

#### CHAPTER V—DUTIES OF OFFICERS

SECTION 1. The President shall preside at all meetings of the Association and of the House of Delegates until its Speaker is chosen and shall appoint all committees not otherwise provided for; he shall deliver an annual address at such time as may be arranged and shall perform such other duties as custom or parliamentary usage requires. He shall be the real head of the profession of the state during his term of office, and as far as practicable, shall visit, by appointment, the various sections of the state and assist the Councilors in building up the county societies and in making their work more practical and useful.

Amend Section 2, Chapter V, by adding in the first line the words "The President and" and by deleting after the word "Council" in the second line the words "and of the Executive Committee of the Council ex officio" and by substituting for the words "those bodies" in the fourth line the words "the Council" so that when amended this section shall read:

SEC. 2. The President and the President-Elect shall be members of the Council and shall attend all meetings of the Council. Should the office of President-Elect become vacant through death or otherwise the Council may fill the vacancy until the next Annual Session of the Association.

### WISCONSIN'S PRESENT PROGRAM

JAMES C. SARGENT, M.D.

MILWAUKEE, WIS.

I have been asked to outline for you in important detail the special program that the profession of my state has undertaken in an effort better to learn and then supply the needs of the sick of our state.

In order that you may have the background necessary for a clear appreciation of this quite expansive program, I should like to remind you that at the time of the meeting of our House of Delegates last fall we had just survived a long and difficult legislative battle that had been truly disturbing. One Hon. Biemiller, a socialist from Milwaukee, had suddenly dumped into the hopper of our legislature a stack of eight bills any one of which would have revolutionized completely the care of our sick, while the sum total of the group tied end to end made a running outline of the history of the socialization of medicine from the earliest *Kranken-kassen* and Mutualities of the old world on down to the

present day cooperative movement in Norway and even group hospitalization in New York.

Possibly also in the way of background, it may be important to recall that Wisconsin rightly has earned the reputation of being a distinctly progressive state; that for a full generation its political life has been colored by a distinctly social viewpoint; that it pioneered in the field of Workmen's Compensation; and that long before the New Deal had gotten around to suggest them for enactment, it had both unemployment insurance and old age pensions in effective operation.

While it may be somewhat surprising in view of our penchant for quite advanced social thinking, it is also of considerable importance to know that Wisconsin is remarkably free from any of the rattle-brained schemes of medical and hospital practice which are so rampant elsewhere throughout the land. While one attempted it and is failing, so far we have nothing to contend with in the nature of the well known and highly touted "loose-leaf" clinic of Southern California. Group hospitalization has not gained as much as a toe hold in our State. Even the long established panel system of medical practice under compensation and the long suffered county physician system of medical relief are both being rapidly opened up in response to a growing faith in the principle of "free choice" in medical practice. It would seem quite obvious then that with a soil so fallow we are in a particularly favorable position to look to our future coolly and carefully, free from the prejudice and confusion of any misguided efforts already established.

With the State already unscathed by any of the newer experiments in sickness care, with the State normally quite advanced in its social thinking, and finally with a prophet arisen who threatened to crystallize and lead against us the full force of his inflamed and overzealous following, there is little wonder, I believe, that our House of Delegates readily agreed upon the urgent necessity of some program sufficiently developed to meet fairly and finally this threatening movement.

If I may generalize, I would say that the feeling back of the actions taken by our House of Delegates was twofold. On the one hand it seemed determined to know the exact truth lying behind the widely heralded charge of serious inadequacies in the supply of good sickness care under our present system. On the other hand it appeared equally determined to know what of actual good had been proved by the several long lasting and well tried newer ventures in the general field of supplied medical care.

Out of this dual interest there developed authority for four separate and distinct lines of special investigation:

First. A widespread survey to be carried on throughout the State designed to sample from a large number of its key communities the actual situation as regards the availability and the caliber of their sickness care.

Second. A critical but understanding study of the several forms of sickness care operating in Europe under state control with particular reference to the experience of those systems in countries and communities closely comparable to Wisconsin.

Third. A critical though distinctly sympathetic analysis of the whole question of the application of the insurance principle to the payment of the cost of hospitalization.

Fourth. The procuring of reliable counsel and advice on the actuarial and legal aspects of hospital insurance.

To accomplish the first of these four special objectives, the House of Delegates authorized the President to appoint a special committee, the responsibility of which would be to circulate thoroughly about the State and to hold informal confidential conferences with those in each community having an intelligent interest and knowledge in medical affairs. It is this committee that was headed by Dr. Arveson, whose place on this

Presented at the Northwest Regional Conference, Chicago, February 13, 1938. Reprinted by permission of the *Journal of the Indiana State Medical Association*.

program I am presently trying to fill. I am especially sorry that he is not here to give you something in detail both of the working of his committee and of the interesting things that it has already begun to find.

This Committee started its work going by automobile into the wilderness of northern Wisconsin. At frequent intervals ever since it has spent one after another two and three day week ends in various hamlets, villages, towns, and cities throughout our State. On each evening of the day that it has been in session it calls into a dinner meeting 25 or 30 of the key men of the profession within the several nearby counties. In this way, two things are accomplished. In the first place, by thoroughly informal discussion the Committee is able to check upon and correlate its findings developed during the day; in the second place, and to everyone's considerable surprise, it has proved an excellent opportunity for bringing to the local profession much needed and much appreciated counsel from the Committee concerning matters uncovered during the day.

While this evening conference with the physicians is, of course, a necessary part in the work of our roving committee, its part is distinctly the minor. The entire daytime is spent in conference with the various people having reliable knowledge concerning the caliber and availability of sickness care in the community. On Sunday, December 12, at one of our smaller inland cities, the Committee had informal personal conferences with the County Judge, the relief supervisor, the head of the local Welfare Bureau, the head of the local Relief Department, the Superintendent of Social Security Adjustment, the county nurse, the city nurse, the company nurse of the leading industrial plant of the city, the health officer, the city physician, the head of the local Women's Club, the head of the Crippled Children's Committee of the Women's Club, the Chairman of the Local Committee on Underprivileged Children, the Superintendent of Schools and the principal of the high school, the editor of the local labor paper, the president of the local central labor council, and the attorney for labor in that community. In addition the Committee had as its guests for noon luncheon the Mayor, the city physician, the mayor of a nearby smaller community, and a State Senator from that district.

On Saturday, three weeks ago, the Committee held an all-day session in our State Capital where it had conferences with the State Health Officer, the President of the State Board of Health, the Director of the State Welfare Department, the Administrator for W.P.A. for Wisconsin and of the Public Welfare Department, the Secretary of the Board of State Teachers College, the Director of the State Pension Department, two professors in the Economics Department of the University of Wisconsin, one a member of the recent Governor's Committee on Public Welfare, the Chairman of this same committee, the Director of Unemployment Compensation, the Chairman of the Industrial Commission, the Dean of our State Medical School, the Secretary of the Wisconsin Manufacturers Association, the Superintendent of the Wisconsin General Hospital, and the head of the Wisconsin League of Municipalities. In addition, the Committee was honored by an interview with the Governor of the State.

Last week end the Committee spent three days in Milwaukee and I read but a few names picked at random among the 50 or more that were interviewed—the Manager of the Milwaukee County Institutions, the Superintendent of the Milwaukee County Department of Outdoor Relief, the Secretary of the Milwaukee County Community Fund, the Director of the Catholic Welfare Association, the Executive Secretary of the Society of St. Vincent dePaul, the head of the Salvation Army, the head of the Probation Department of the Milwaukee County Juvenile Court, various health officers, nurses, civic leaders, legislators, heads and coun-

cilors of the various labor unions and trade associations, etc.

To give you some impression of the thoroughness with which this Committee is going about its task, I might add that Mr. Crownhart and the Committee Chairman, Dr. Arveson, have recently spent a full week in the East where they had the privilege of long informal interviews with several national figures whose interest in the general question of the supply of sickness care is fully recognized. I refer to Michael Davis of the Rosenwald Foundation, Dr. Willard C. Rappleye, Dean of the Columbia University College of Physicians and Surgeons, Isadore Falk, Director of Health Studies and Arthur Altmeyer, Chairman of the Social Security Board, Dr. Kingsley Roberts of the Bureau of Cooperative Medicine, Dr. Frank Boudreau, late secretary of the Health Section of the League of Nations at Geneva, and others.

Purposely, I have gone at length in indicating the wide and informed source from which this Committee is gaining its information. It should be apparent from the mere recital of this list, that a Committee which is at all discerning could not fail to come back to our State Society this fall with full and accurate knowledge as to just where, if at all, the supply of sickness care in Wisconsin is deficient and what if anything there is to do about it.

While it would be pure presumption for one even to hazard a guess as to what the final outcome of this survey is to be, it has gone far enough already to turn up some genuine surprises. Perhaps one or two might be of interest here. There are some counties in Wisconsin without towns of any real size, counties in the poorer northern sections of the State. Despite their economic difficulties it is usual to find that in these counties the public health program is pretty well developed throughout the countryside. Here is an interesting fact, however. In certain of our counties which are blessed with sizable centers of industry and population, the public health program, though elaborately developed within its cities, stops dead in its track at the city limits. Milwaukee has won the annual health award of the National Chamber of Commerce so consistently in years past that it has actually been barred from competition. Yet at the same time the kids in the little red school houses on the fringe of Milwaukee County have been using old-fashioned tin cups and roller towels! In the city of Sheboygan every child is vaccinated, immunized, examined annually, and even screened for tuberculosis at high school age, yet 6,500 of the 8,000 lads and lassies in the surrounding country side are not even vaccinated. Would anyone dare to deny that here, at least, is an astounding instance of inadequacy in sickness care?

To carry out its second main objective, the House of Delegates determined to commission our executive secretary, Mr. George Crownhart, to make a three or four months' survey of the systems of medical care presently in operation in several of the large European countries. While there is a ponderous literature already available on the claimed merits and demerits of these European systems, the very divergence of views is such as to leave the minds of the profession of our State completely in turmoil over the whole affair. That is perhaps the commanding reason why it has chosen to take a look at the several foreign systems in vogue through the scrutinizing eye of our own state secretary. We hold him in sufficiently high esteem to be willing to trust very largely his judgment in such affairs. A second, though none the less pertinent reason for this novel procedure, is the feeling that our interest in the various systems of foreign medical service is of value only as it is studied in relation to problems peculiar to our own community. As an example, I would point out that while the cooperative movement in the Scandinavian countries may be found utterly inapplicable to the practice of



medicine in Pittsburgh or Chicago, it is just barely possible that it might still hold some promise of usefulness for the sparsely settled sections in the northern part of our State. George Crownhart is sufficiently well known to you so that I need spend no particular time in telling you of his broad contacts. While the itinerary for his trip abroad is still quite incomplete, you may be sure that it is already sufficiently outlined for us to know that he is to have access to the fountainheads of real and trustworthy information wherever he is to go.

To accomplish the third phase of its special program our House of Delegates, for the first time in its history, authorized the appointment of a mixed Committee on which individuals not members of our Society are being asked to serve along with an equal number of our own members. This special Committee on Hospital Insurance has been given the specific task of determining:

First. Whether there is a reasonable need in Wisconsin for the use of the insurance principle in the prepayment of the cost of hospitalization and if so,

Second. What is the best possible way to proceed in its fulfillment.

The chairmanship of this special Committee has been assigned to Dr. Stanley J. Seeger, recent Past President of our State Society, Chairman of the recently created Council on Industrial Health of our American Medical Association, for many years Chief of Staff of one of our larger private hospitals and himself vitally interested in the whole field of hospital insurance. Serving with five physicians from among our membership, are five laymen, all carefully picked for their particular ability to act in our behalf. They are Sister Mary Bernadette, retiring president of the Wisconsin Conference of Catholic Hospitals; Rev. Herman L. Fritschel, Superintendent of Milwaukee Hospital and the dean of lay hospital superintendents in Wisconsin; Mrs. C. D. Partridge, executive secretary of the Wisconsin State Nurses Association; our own George Crownhart, who has for many years served as secretary of the Wisconsin Hospital Association; and Mr. C. I. Wollan who was until his recent untimely death superintendent of the Lutheran Hospital in LaCrosse.

While no person was appointed to this Committee whose background and experience did not leave him completely familiar with the subject of group hospitalization in America, this Committee has spent numbers of full-day sessions in detailed study of this movement. Only a few weeks ago it was in session here in Chicago, at which time an entire day was devoted to an informal conference with Mr. J. Rufus Rorem, now Director of the Committee on Hospital Service Plans of the American Hospital Association and our own Dr. R. J. Leland, head of the Department of Economics of the American Medical Association.

While it is really a part of this study of hospital insurance, our House of Delegates as the fourth main part of its special program authorized the expenditure of a substantial sum for the employment of actuarial and legal counsel to advise it on all phases of the question of the possible application of the insurance principle to the payment of hospital costs. In fulfillment of this plan, under the supervision of our special Committee on Hospital Insurance, the services of Mr. Herman L. Ekern and his staff of legal, economic, and actuarial experts have been retained. While the agreed sum of \$10,000 may sound enormous for this purpose, I would have you know that those of us in Wisconsin who know Mr. Ekern, his peculiar fitness for the job for which he is being employed, and particularly his own great personal interest in forward looking and social thinking, know full well that the service which he promises to perform far transcends in value this humble fee. Mr. Ekern was Insurance Commissioner in Wisconsin under the Senior LaFollette and subsequently served as attor-

ney general. After service in the legislature, he retired from public life to the private practice of actuarial and legal counsel in insurance law. He drafted the enactment setting up our Wisconsin Teacher's Retirement Fund and had much to do with the setting up of Federal Deposit Insurance Corporation together with many other pioneer movements in the field of social insurance.

Here again it would be pure presumption for me to anticipate either the final report of this special Committee on Hospital Insurance or what the nature of the counsel and advice to be given by Mr. Ekern is to be. I am violating no confidence, however, when I indicate to you that the profession of Wisconsin is quite conscious of a number of serious defects in group hospital insurance as it is presently being set up throughout the land. Yet in spite of these misgivings, many are impressed with the possibilities for great good that lie in the application of the insurance principle to the prepayment of hospital costs. I have no doubt that this thought is strong in the minds of our committee and that under the advice of its special counsel it will endeavor to suggest some completely new and refined developments in the field of hospital insurance.

Finally, knowing your interest in the mechanics of organization work, I am certain that you would like to know something of the financial side of this whole program. As its several aspects began to crystallize in the minds of the members of our House of Delegates, the fact became evident that it would require an outlay of some \$20,000 beyond the regular costs of our routine society activities. It was merely a matter of arithmetic then to arrive at the figure of \$10 as additional income to be gotten from each one of some 2400 members, having in mind of course that a sudden increase in dues of this magnitude might very properly be expected to drive off some of our membership. Our House of Delegates, and I now believe very wisely, determined that this extra money should be raised by a special assessment so that no implication remained suggesting that dues for subsequent years would be any different than they had been before. Our House of Delegates, also I believe wisely, qualified this assessment by the specific charge that it stand as a permanent lien against a member so that anyone resigning to avoid it would have to meet it before he could be readmitted to membership at a later date.

As I have indicated before, it was conservatively estimated that we might lose, at least for a temporary period, some two or three hundred of our members. To date we have received three resignations. While in the early months after the levying of this special assessment there was something of a general feeling of protest among the membership, it was neither organized nor long sustained. As the several phases of the special program began taking form the profession gradually came to understand what was being undertaken and the meticulous way in which it was being carried out. With that understanding, all protest such as it was completely disappeared.

In a very simple way, this outlines for you the special program on which the profession of my State has embarked. I need not tell you that we are intensely interested in the plans and programs of the profession of other States. Neither do I need to assure you that we have determined upon a very definite course of our own. I am confident that the citizens of Wisconsin are now acutely aware of our determination to lead intelligently and thoughtfully wherever we are to go. I am confident that while the organized profession of our State maintains this attitude of honest inquisition and careful planning it will be a long lifetime before another Biemiller can again reach the pinnacle of public acclaim that he so recently held. And, finally, I confidently hope that out of all this may come something in the nature of a real contribution to American medicine.

## OBITUARY

### JOHN C. SCOTT, M.D.

Dr. John C. Scott, Lebanon, a graduate of the Indiana College of Medicine, Indianapolis, 1888, died of pneumonia at his home January 17 following a brief illness, aged 66 years.

Dr. Scott was born at West Hartlepool, England, coming to this country when he was 12 years old. He spent much of his early life in Joliet, Illinois, and began his practice of medicine in Indiana. He moved to Laclede County in 1911 and remained in practice there until a short time before his death.

He had served the Laclede County Medical Society as delegate, vice president and president.

He is survived by his widow, Mrs. Ida Tippy Scott, one son, three sisters and one brother.

### FRANKLIN W. LESTER, M.D.

Dr. F. W. Lester, Marionville, a graduate of the Homeopathic Medical College of Missouri, St. Louis, 1900, died at Aurora of complications following influenza, December 14, 1937, aged 70.

Dr. Lester was a native of Lawrence County and taught school in that county for several years before studying medicine. After completing his medical course he began practice in St. Louis. After twenty years his health became impaired and he gave up his practice and entered the lumber business in Oregon. After a short time he returned to Marionville and renewed his practice of medicine and remained in active practice until a short time before his death.

He is survived by his widow, a sister and three brothers.

### JAMES W. MOTT, M.D.

Dr. J. W. Mott, Poplar Bluff, a graduate of the University of Louisville School of Medicine, Louisville, Kentucky, 1886, died February 19 at Los Angeles, California, where he had been residing while recovering from an operation. He was 74 years old.

Dr. Mott was born in Obion County, Tennessee. He attended schools in Fulton, Kentucky, and Dresden, Tennessee, before studying medicine at Louisville. He took postgraduate work before entering practice, specializing in eye, ear, nose and throat work.

He had been active in civic affairs and in church work until his health became impaired in 1936. He was elected an honor member of the Butler County Medical Society in 1936.

### I. W. AMERMAN, M.D.

Dr. I. W. Amerman, Nevada, a graduate of the University of Louisville School of Medicine, Louisville, Kentucky, died October 14, 1937, of heart disease at the Amerman Sanitarium, Nevada, aged 86 years.

He was born in Vermillion County, Indiana, where he attended the public schools. After receiving his medical degree he took postgraduate work before beginning his practice in Harrisonville. In 1883 he moved to Nevada and in 1888 founded the Amerman Sanitarium. He was active in civic and church work. He was on the first board of the Cottey Junior College for Women and at the time of his death he was president of the board. He was a Mason and a member of the I. O. O. F. Lodge. He was an honor member of the Vernon-Cedar County Medical Society. He was loved and respected in his community.

He is survived by his widow, Mrs. Mollie Angle Amerman, a daughter, a sister and two brothers.

### J. O. FICKE, M.D.

Dr. J. O. Ficke, Salem, a graduate of Beaumont Hospital Medical College, St. Louis, 1900, died at his home March 22, aged 66 years.

Dr. Ficke was born in Chesterfield and for thirty-four years practiced in or near St. Louis County, practicing in St. Charles, Grover and Eureka. In 1934 he went to Salem where he remained in active practice until the time of his death. He was active in civic life and although he had been in Salem a relatively short time he was actively identified in community life there.

He is survived by two daughters and one son.

### CULLEN OWEN THOMAS, M.D.

Dr. Cullen O. Thomas, Worthington, a graduate of Central Medical College, St. Joseph, 1903, died at his home December 25, 1937, aged 59 years.

Dr. Thomas was born in Clay County, Missouri, and received his early education there. After completing his medical studies he began his practice in Worthington and remained in practice there until the time of his death.

He was a member of the Putnam County Medical Society.

He is survived by his widow, Mrs. Lucy Hodges Thomas, two sons, two grandsons, his mother, one brother and two sisters.

### JOSEPH G. BEATY, M.D.

Dr. J. G. Beaty, Chilhowee, a graduate of the Missouri Medical College, St. Louis, 1893, died March 24 at his home, aged 71 years.

He was born in Henry County, Missouri, and received his early education in that community. After his medical studies he began practice at Shawnee Mound where he remained for five years. He then located in Huntingdale where he practiced for twenty years before going to Chilhowee.

During the World War he was a captain in the medical corps and was stationed at Camp Funston and at Fort Riley.

Dr. Beaty was president of the Johnson County Medical Society at the time of his death. The Society passed the following resolution:

*Resolved*, That in the passing of Dr. J. G. Beaty the Johnson County Medical Society has lost its worthy president and one of its most loyal members. He was a faithful supporter of organized medicine and a benefactor to his community, willingly giving time and service to suffering humanity; be it further

*Resolved*, That the Society extend to his bereaved family their heartfelt sympathy and send to them a copy of these resolutions; that a copy be spread upon the records of the Society and a copy be sent to THE JOURNAL OF THE MISSOURI STATE MEDICAL ASSOCIATION and to the *Journal of the American Medical Association*.

WM. R. PATTERSON, M.D.,  
JOHN A. POWERS, M.D.

Dr. Beaty is survived by his widow, Mrs. Geneva Hibler Beaty, a son, two brothers and a half sister.

### ROBERT E. CRABTREE, M.D.

Dr. Robert E. Crabtree, Amsterdam, a graduate of the Kansas City Medical College, 1904, died at the Research Hospital, Kansas City, on March 14, aged 66 years.

Dr. Crabtree was born in Henry County in 1871, moving to Bates County early in life. After completing his medical education he practiced for a time in the eastern part of Bates County, later locating in Butler where he was engaged in active practice for more than forty years. Failing health forced him to abandon a large practice and in 1936 he moved to Amsterdam, a smaller community.



He was active in civic affairs having served as county coroner and as county health officer. He was an honorary member of the Bates County Medical Society.

Dr. Crabtree served as a medical officer with the Missouri National Guard during the Mexican border troubles and in a like capacity with the 35th Division in France and Germany during the World War. He was the first commander of the James P. Arnold Post of the American Legion and was an active member until his death.

He is survived by his widow, Mrs. Grace Gault Crabtree, two daughters and two brothers.

#### DANIEL MORTON, M.D.

Dr. Daniel Morton, St. Joseph, was born in Kentucky, November 25, 1864, and died on March 14, 1938, in St. Joseph. He was buried on March 16 after a private funeral at the home.

Dr. Morton was the son of a Methodist minister and was reared in his home state of Kentucky. After graduation from the public schools he attended the Medical Department of the University of Louisville from which he was graduated in 1887. He did postgraduate work at Columbia University, New York, before locating in St. Joseph in the fall of 1888.

Dr. Morton had practiced medicine and surgery in St. Joseph for fifty years. He was a member and past president of the Buchanan County Medical Society, a member of the Missouri State Medical Association and the American College of Surgeons. He contributed many articles to the medical journals of these societies and was an editor of the *Medical Herald* and an associate editor of the *St. Louis Medical Fortnightly* in his early medical years. He was a member of the board of governors of the American College of Surgeons.

He was a charter member of the board of directors of the Social Welfare Board of St. Joseph. He may well be called the father of the Social Welfare Board as he more than any other individual was its originator and benefactor. He had given freely of his thought and energy to the work of that organization since its inception up until the last day before his fatal illness.

Dr. Morton has served on the St. Joseph Library Board, on the executive committee of the Boy Scout organization, as a director of the Y. M. C. A., was a charter member of the Commerce Club and other philanthropic and civic enterprises.

Dr. Morton was a devout member of the Methodist Episcopal Church, South, and was a member of the board of stewards of both the Francis Street Methodist Church and the Hundley Methodist Church. He was one of the founders of the Wesley House.

Dr. Morton was a major and surgeon of the old 4th Missouri Infantry. From 1904 to 1907 he was acting chief surgeon of the First Brigade of the Missouri National Guard. From 1907 to 1912 he was chief surgeon of the Missouri National Guard with rank of lieutenant-colonel.

Dr. Morton was a man of noble character and extreme vigor. He was noted for his integrity and devotion to duty. As a physician he labored hard to give his patient every possible advantage. He was a Christian gentleman. He was a loyal member of the Buchanan County Medical Society and of every other branch of organized medicine. Every member of the Society has suffered the loss of a friend and our profession will miss him and his activities greatly. Therefore be it

*Resolved*, By the Buchanan County Medical Society that we deeply regret the death of our respected and esteemed brother and that we extend to his family and friends our sincere sympathy. Be it also

*Resolved*, That a copy of these resolutions be sent to the family and placed in the annals of this Society.

W. ROGER MOORE, M.D.,  
H. W. CARLE, M.D.,  
OWEN W. D. CRAIG, M.D.

#### HENRY J. RAVOLD, M.D.

Dr. Henry J. Ravold, St. Joseph, was born April 3, 1864, in Greenville, Illinois, and died January 13, 1938. He was buried in the city of his birth.

Dr. Ravold attended the public schools in Greenville and gained his medical education at the St. Louis Medical College from which he obtained his degree in 1886. He went to St. Joseph in 1890 and had been in active practice there since that time. He was in general practice for a time after locating in St. Joseph but for the past many years his work had been confined to radiology.

Dr. Ravold was a loyal member of the Buchanan County Medical Society, the St. Joseph Clinical Society, the Missouri State Medical Association, the American Medical Association, the Radiological Society of North America, and was a licentiate of the American Board of Radiology.

Dr. Ravold was a member of Christ Episcopal Church and was affiliated with several fraternal organizations. He was a past commander of Hugh de Payns Commandery, Past Potentate of Moila Temple Shrine, Past Grand Chancellor of the Knights of Pythias, a Past Exalted Ruler of Elks Lodge No. 40, a past Patron of Radiant Chapter No. 88, O. E. S., a member of Charity Lodge A. F. & A. M. and Mitchell Chapter Royal Arch Masons. He was past president of the St. Joseph chapter of the Sons of the American Revolution and a member of the St. Joseph Country Club and the Moila Club.

Dr. Ravold was a man of noble character. He was a good physician and a good citizen. He was a man of wide acquaintance and many friends. Our city and our profession have suffered a distinct loss in the passing of Dr. Ravold. Therefore be it

*Resolved*, By the Buchanan County Medical Society that we express our deep sympathy to the family and friends for the loss they and we have sustained in the death of this valuable member of our Society. Be it also

*Resolved*, That this expression of our sympathy be extended to the family and a copy of this resolution be permanently placed on the records of this Society.

W. ROGER MOORE, M.D.,  
H. W. CARLE, M.D.,  
OWEN W. D. CRAIG, M.D.

#### HAROLD BERTRAND HEDRICK, M.D.

One of our best loved and most widely known members, Harold Bertrand Hedrick, Kansas City, died February 21, following a cerebral hemorrhage. Always friendly, jovial and apparently in good health, he was in the prime of life, a leader in his chosen special field of eye, ear, nose and throat.

Dr. Hedrick had been active in his practice, serving patients in St. Mary's, St. Luke's, Trinity, General and Mercy hospitals and attending a busy office practice in the Professional Building. He was stricken while calling on his patients at St. Mary's Hospital two days before his death, and, though immediately put to bed in that hospital, he never regained consciousness.

Our deepest sympathy goes to the members of his family in their sorrow. What a loss it is to them and to his patients and to our community.

Dr. Hedrick was born June 8, 1890, in Leavenworth, Kansas. His father, Harry Hedrick, who died in 1907, was a printer. In 1908 Dr. Hedrick graduated from Leavenworth High School. In 1913 he received his medical degree from the old University Medical College in Kansas City. When the United States entered the World War Dr. Hedrick enlisted as a lieutenant in the Medical Corps, having twenty-two months of active service, first with the British Expeditionary Force in France and Italy and later with the American Army when its Medical Corps was organized. He was wounded twice and was awarded the British Military Cross. He was discharged with the rank of captain in May, 1919, return-

ing to Kansas City to resume his practice in the treatment of diseases of the eye, ear, nose and throat. He took postgraduate work at the Knapp Memorial Hospital, New York City; at the University of Pennsylvania, and he also studied under Dr. Alexander of Vienna.

Except for the time he was serving in the Army Medical Corps or taking special postgraduate work, he had practiced in Kansas City since 1914. In addition to his busy private practice he gave a great deal of his time and energy in serving the charity patients in the Municipal and Mercy hospitals and clinics. He was one of the chiefs of service at the General Hospital. In addition to being a loyal member of the Jackson County Medical Society, he was a member of the Missouri State and American Medical associations. He was a member of the Kansas City Society of Ophthalmology and Otolaryngology, of the Kansas City Southwest Clinical Society, of the Academy of Ophthalmology and Otolaryngology, and of the Phi Beta Pi Medical Fraternity. He was a member of the Knights Templar and Shrine Masonic Order. For twenty years he was a member at St. Andrew's Episcopal Church at which church the funeral services were held.

Dr. Hedrick is survived by his wife, Mrs. Mollie Mithum Hedrick, his mother, two sisters and a brother. —J. H. J.—From the Jackson County Medical Society Weekly *Bulletin*.

#### JOHN HENRY SAMPSON, M.D.

Dr. John Henry Sampson, St. Joseph, was born in Buchanan County on January 30, 1857, and died at the age of 81 on February 10, 1938.

Dr. Sampson practiced medicine in Buchanan County for over fifty years and was active in caring for the sick until the time of his death. He was a graduate of the Missouri Medical College, class of 1881. Dr. Sampson held the chair of diseases of children at the Ensworth Medical School of St. Joseph from 1895 to 1914. He was a member of the Buchanan County Medical Society. His only son, Dr. Chris. M. Sampson, was given a medical education and has practiced in St. Joseph with his father.

Dr. Sampson had a large practice in Buchanan County over a long period of years. He was an upright man and a good physician. He practiced medicine in a rural community through the days when doctors suffered many hardships and were poorly compensated. Many citizens of rural Buchanan County will mourn his death. Therefore be it

*Resolved*, That the Buchanan County Medical Society pay its respects to this deceased member and that the Society express the proper condolences to the bereaved family.

W. ROGER MOORE, M.D.,  
H. W. CARLE, M.D.  
OWEN W. D. CRAIG, M.D.

## BOOKS FOR LEISURE MOMENTS

### COSMIC ARRHYTHMIA

The child with his epigram ending in "hope to die" like the senescent adult realizing the closeness of his approach to the River Styx is eternally concerned with death. The latter is even more concerned with the possibility of warding off the grim specter. Today man does not seem content with the achievements of the Biblical three score and ten. He must, if he can, live on to the mathematical limit of life, 106 years if he believes the more pessimistic statisticians. If he seeks for a trifle more optimism he can look forward to 185 years of living, depending merely upon the theorist whom he chooses to follow. Too, if he wishes he may hark back

to Methuselah and anticipate nearly a thousand years in which to suffer the slings and arrows, etc.

Just why the human being should seek the utmost in chronological participation in earthly affairs is not clear. This preoccupation with the subject of living is even more difficult to understand today when 40 is old and there is no national legislation assuring him of a permanent pension after 60. What the philosophers, who would add either 46 or 125 years to his span of troubled worries, would wish him to do in these extra years is by no means clear.

Dr. William Marias Malisoff of the Graduate School of the University of Pennsylvania is concerned over "The Span of Life" (J. B. Lippincott Company, Philadelphia). He has made a thoroughgoing collection of the observations of an innumerable company, many of them quite distinguished. He is at pains to quote lengthily from these illustrious contemporaries and forebears that the reader may have an exact concept of the possibilities of living longer. Note that he does not seem concerned with having them live better; just longer. To prove the possibilities in true scientific fashion he has recourse to a recital of the number of years of life that trees flourish—15,000 years seems to be the record but what the tree accomplished in that millennial period is not stated. A beneficent Creator insured to it an ability to withstand drought and famine better than the puny creatures who will finally cut it up for kindling and paper pulp.

Feeding rats an optimal diet will add days to their years. We are led to suppose that feeding human beings an optimal diet might add years to their days. The rabbit emerges preeminent among Noah's creatures from the host of small animals which may be depended upon to prove any one of a variety of theories. For cholesterol will find its way into the interstices of its aorta, produce atheromatous change. The subsequent loss in elasticity of the arterial tree is responsible for the speeding up of the rate of propagation of the arterial pulse. When to the fatty deposit lime is added the increase in the rate of propagation of the arterial pulse may be accompanied by dire results. The most important of these is undoubtedly interference with tissue nutrition, with alterations in the protoplasmic continuity of the cell.

Carrel and his coworkers at the Rockefeller Institute have kept alive a bit of chicken heart for twenty-six years. They have cut away a part of the tissue each day. They are in the enviable position of being able to alter the nutrient media at will and as the metabolism of this respiring tissue indicates that its food supply should be altered. They have the food at hand. Perhaps the dread cholesterol gets never a chance to penetrate these delicate strands of living tissue. Perhaps that may explain its apparent longevity.

But without cholesterol life must be a rather barren affair. This little known fatty alcohol enters intimately into the production of the sexual hormones, to mention one of its single known functions in the animal economy. So jealous is the body of this fat-like substance that the body deprived of it synthesizes it out of noncholesterol precursors.

No, Malisoff does not make out a convincing case, either in regard to the span of life or as to the rôle of cholesterol in shortening that span. At least he does not set out to prove that tobacco and alcohol are the *bete noires* of man's existence. That is a considerable virtue. In many places he writes with sly humor and the reader may be led to suppose that after all he is less concerned with the actual span of life than he is with indulgence in good philosophic exercise. In the latter he succeeds rather well.

Oh, yes. Cosmic arrhythmia is a term invented by the author to denote an accidental or unlooked for in-



terruption in the business of living after cholesterol has gained the upper hand. "Cholesterol seems to be a nigger in almost any woodpile. . . . This promethean substance is present in unusually large amounts in our organs . . . it is an excellent agent for slowing down many oxidations. . . . Any plan to prolong life will have to deal with this omnipresent substance." In other words, to postpone cosmic arrhythmia Malisoff believes that we must control cholesterol. B. Y. G.

#### RATS TO THE FORE AGAIN

There isn't, as may be loosely assumed after pigs have been dumped into rivers and potatoes into sloughs, an excess of food in this country. Actually, except for a few foodstuffs there is a woeful undersupply of edibles. Only flour, cereals, potatoes and sugar are produced in overabundance. Judged by the modern knowledge of nutrition American farmers should raise a billion pounds more of peas, beans and nuts each year. They should pasture enough cows to give over twelve billion quarts more of milk. They should pen hogs and pigs to afford over a billion pounds more of bacon and pork. They should increase their truck and orchard acreage to yield over nine billion pounds more of fruits and vegetables. While they may not hatch enough chickens to insure one for every pot they should encourage those they have to lay over ten billion more eggs each year. Such an increased output of farm products would just meet the nutritional demands of the American people, according to Professor C. C. Furnas. In collaboration with his wife, Professor Furnas writes about all this and more in his delightful new book, "Man, Bread and Destiny" (Reynal & Hitchcock, New York).

There is zest to the writing of the Furnases. It is sprightly, interspersed with sly humor, sagacious, notable for pithy comment. It is much easier reading than "The Next Hundred Years" which was reviewed in these columns a few months ago. Yet the story which it tells is not a particularly happy one. In the first place it reports that malnutrition is rampant in this country affecting 20 per cent of the population. Quantitatively, purely from the point of view of calories, the American people are not getting enough to eat. But even more depressing is the fact that qualitatively, from the point of view of essential nutrients, the American diet is a poor one. It may be better than that in India. It may be better than that of the African pygmies. It may be better than that of the Chinese although the Chinese, through the use of human excreta, for fertilizing, make every effort to return to the soil the essential minerals and the nitrogenous stuff which growing plants require for optimal sustenance. With the excreta they return typhoid and dysentery germs which quickly find their way back into the bodies of the coolies—before they are again returned to the soil to wreak their havoc on yet another generation.

So the problem of nutrition goes back, first of all, to the soil. Into it must be placed the chemicals on which plants and animals thrive. These chemicals must seep into the fruits and vegetables which form the ultimate basis of all animal life. The land itself must be used to better advantage. Three tenths of one acre of ground will produce enough sugar beets to supply the nearly million and a half calories which the average man needs each year. If the total supply of calories came from beef nearly fourteen acres of land would be needed. Enough apples can be produced on an acre and a half, doctors notwithstanding. That leads to the more human aspects of the problem.

Farmers can be taught to raise more fruits and more vegetables. They can be induced to breed more milk cows and plant more beans. But they must be made to see that such a change in farming is going to be worth

while. Unless physicians and other persons charged with the education of the people can lead them to choose a wiser diet, to eat in accordance with the precepts of Sherman and McCollum and Rose and all the rest—unless this can be done the American people will go on in their heedless way, suffering because they fail to take advantage of the nutritional advances which the Furnases record.

From time to time books have been written which purport to show the effect of politics, of royal intrigues, of expanding national ambitions, of disease itself on the course of human destiny. Furnas presents evidence to prove that the food supply has been of more importance than any of these in the evolution and wars of the human race. He ascribes Napoleon's defeat at Leipzig to sluggishness induced by eating too well of a shoulder of mutton stuffed with onions. And if Marie Antoinette has not persisted in her stupid belief that the peasants could eat cake when there was no bread, there might never have been a Napoleon.

Protein deficiency is accompanied by lowered mentality—at least in rats. Vegetable proteins are distinctly inferior to animal proteins in overcoming the deficiency. Breast fed infants, during certain stages of their existence, show higher intelligence quotients than bottle fed infants. Perhaps this is due to the minimum of galactose in the formula prescribed for the average baby as compared to its abundance in breast milk.

Each of the essential nutrients comes in for the searching analysis of Professor Furnas. He relates them intimately to the problem of every day living. He writes in a manner that the layman may understand. Perhaps he overemphasizes the importance of the vitamins. But he debunks the propaganda of the food faddist. He favors the use of canned fruits and vegetables, not because they permit the housewife an extra hour of bridge but because canners are the more adept at preserving the essential nutrients of food. Then he proceeds to tell the housewife how to cook as well as the canners cook.

Books of the type represented by "Man, Bread and Destiny" should find a wide distribution for they carry the story of food in terms intelligible to the housewife. Through food, the stuff that makes our bodies in the first place and keeps them functioning in the second, the health and well-being of the American people can be improved. It is to them that Furnas dedicates his book in these significant words: "To Our Respective Fathers Who Might Still Be Alive If Nutritional Knowledge Had Been Complete During Their Lifetimes."

B. Y. G.

Henry C. Sherman and Caroline Sherman Lanford, New York (Journal A. M. A., April 16, 1938), say that riboflavin appears to be formed primarily in the green leaves of actively growing plants and to remain there in higher concentration than elsewhere in the plant. There are indications that, as the leaves mature and dry, there may be a considerable diminution in their riboflavin value. As yet, estimates of the amounts of riboflavin required for normal human nutrition are necessarily matters of judgment rather than of actual direct measurement. The independent judgments of Rose and Stiebeling are in substantial agreement and are probably the most influential estimates thus far available. Rose has suggested for children up to 10 years of age at least 400 units a day in all cases, or 20 units per hundred calories if more than 2000 calories a day is consumed; for adults, 20 units per hundred calories. The recommendation of Stiebeling is 450 units for boys less than 6 and girls less than 7 years of age, 540 units for boys from 7 to 10 and girls from 8 to 13 years of age, and 600 units for older children and adults, or 570 units per capita of the population.

## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.  
Perry County Medical Society, December 4, 1937.  
Ste. Genevieve County Medical Society, December 14, 1937.  
Camden County Medical Society, January 7, 1938.  
Webster County Medical Society, January 7, 1938.  
Montgomery County Medical Society, January 14, 1938.  
Dent County Medical Society, January 21, 1938.  
Miller County Medical Society, February 8, 1938.  
Moniteau County Medical Society, March 11, 1938.

ASSOCIATE EDITORS: COUNCILORS OF THE  
TEN COUNCILOR DISTRICTS

#### SECOND COUNCILOR DISTRICT

H. B. GOODRICH, HANNIBAL, COUNCILOR

A meeting of the county societies in the Second Councilor District was held at the Hannibal Country Club, Hannibal, April 7. The Marion-Ralls County Medical Society was host. In spite of the unseasonably cold weather accompanied by rain, sleet and ice, eighty-five physicians attended the meeting.

The program started at 3 p. m. with three scientific papers for the afternoon. Dr. C. E. Salyer, president of the Marion-Ralls County Medical Society presided. These papers were on subjects of real interest to the general practitioner and were ably presented by the three speakers.

Dr. Augustus P. Munsch, Professor of Medicine at the St. Louis University School of Medicine, talked on "Chronic Rheumatoid Arthritis." He stressed the point that something can be done for most of these patients and that the arthritis must be considered a local manifestation of a constitutional disease. Therefore the general care of the patient, with particular emphasis on the elimination of any dietary deficiencies with the avoidance of excessive carbohydrate, is of fundamental importance.

The second speaker was Dr. Ralph Kinsella, Director of the Department of Medicine of the St. Louis University School of Medicine, who discussed "Streptococcus Infections and Sulphanilamide." He reported that there was evidence that sulphanilamide was of real value in

certain cases of streptococcus infection, particularly if given early in the acute stage of the illness. He emphasized that if treatment with sulphanilamide is begun it should be continued for at least seven days in adequate dosage unless signs of toxicity appear such as cyanosis, dermatitis or agranulocytosis. He recommended a conservative optimism in its use, but is convinced that it is not a panacea which always gives spectacular results.

Dr. Cyrus E. Burford, Professor of Urology of the St. Louis University School of Medicine, concluded the scientific program with a paper on "Urology in Children." In the discussion of this subject he emphasized the more frequent occurrence of pathological conditions of the urinary tract in children than is usually appreciated by the general practitioner. He spoke particularly of pyelitis, ureteral obstructions, renal calculi and tumors.

After this program there was an hour of sociability which admirably fulfilled its purpose of getting all the physicians present better acquainted. This was immediately followed by a buffet supper furnished with the compliments of the Marion-Ralls County Medical Society.

Following the supper Dr. H. B. Goodrich, Hannibal, Councilor of the Second District, introduced Rev. Tom C. Fox, Chaplain of St. Elizabeth's Hospital, Hannibal, who acted as toastmaster. The first speaker of the evening was Mr. Elmer H. Bartelsmeyer, St. Louis, Assistant Secretary of the Missouri State Medical Association. He spoke with particular regard to the questionnaires which are being sent out by the American Medical Association to its component state and county societies. This is an effort to obtain a complete survey on matters of public health. These questionnaires are welcomed as the first instance of the A. M. A. coming directly to county societies through the state associations for specific information in regard to the practice of medicine and public health.

Following Mr. Bartelsmeyer, the president of the Missouri State Medical Association, Dr. Dudley S. Conley, Columbia, addressed the assemblage. He discussed the importance of these questionnaires being carefully filled out by every physician in every county society. The information gathered in this way will be accurate and of great value. The physicians are the only group who can give complete and accurate information. Cooperation of every member of organized medicine with this survey is of utmost importance. The secretary of each county society must take the responsibility of seeing that every member in his society does his part in this search for facts. He urged that everyone present make a sincere effort to attend the Annual Meeting in Jefferson City May 2, 3 and 4, and particularly that all county societies have their delegates present at the sessions of the House of Delegates during that meeting.

The final speaker of the meeting was Dr. W. T. Coughlin, Professor of Surgery of St. Louis University School of Medicine. He discussed "Medical Insurance." He said that too many times in the past outside agencies and groups had arranged legislation and told the medical profession how to practice. He referred particularly to the compensation law. One of the reasons that these outside agencies were the prime movers in such instances was that organized medicine had not taken the initiative to tackle the problem first. He said there may develop the necessity of having a medical insurance program for the low income groups. Therefore we should work out plans by which medical insurance can be offered to the low income groups, plans which will be under the control and guidance of each county medical society concerned. Then the medical profession would be in a position to declare its stand and act upon it.

Besides the guest speakers the meeting was honored



by the presence of Dr. Curtis H. Lohr, St. Louis, Councilor of the Third District; Dr. R. B. Denny, Creve Coeur, Councilor of the Fourth District; Dr. W. A. Bloom, Fayette, Vice President of the State Association, and Dr. Ralph R. Wilson, Kansas City, Chairman of the Maternal Welfare Committee of the State Association. The committee in charge of the meeting was Dr. W. F. Francka, Dr. B. L. Murphy, and Dr. H. B. Goodrich, Chairman, Hannibal.

#### Randolph-Monroe County Medical Society

The Randolph-Monroe County Medical Society met March 15 at the Public Library, Moberly, at 8 p. m. The meeting was called to order by the secretary, Dr. M. E. Kaiser, Moberly.

A talk was given by Dr. H. B. Goodrich, Hannibal, Councilor of the Second District, on the Annual Session of the Missouri State Medical Association.

The scientific program consisted of a talk on "Diagnosis and Treatment of Diabetes" by Dr. B. Y. Glassberg, St. Louis. A general discussion followed.

The following guests and members were present: Drs. B. Y. Glassberg, St. Louis; H. B. Goodrich, Hannibal; P. V. Dreyer, Huntsville; G. W. Hawkins, Salisbury; R. A. Woods, Clark; Harold Dixon, Chicago, Illinois; R. D. Streeter, T. S. Fleming, C. K. Dutton, M. P. Hunter, O. K. Megee, L. O. Nickell, C. C. Smith, L. L. Grzesk, P. C. Davis, L. E. Huber, F. L. McCormick and M. E. Kaiser, Moberly.

Following the meeting a lunch was served at Miller's Cafe.

#### Meeting of April 12

The Society met at the Public Library, Moberly, at 8 p. m. on April 12, with the president, Dr. G. M. Ragsdale, presiding.

The application for transfer of Dr. Philip V. Dreyer, Huntsville, from the Callaway County Medical Society was accepted.

Dr. G. V. Stryker, St. Louis, spoke on "Syphilis." Dr. Stryker is chairman of the Committee on Syphilis of the State Association and ably outlined the program of that Committee in regard to action to be proposed at the Annual Session. This was followed by lantern slides and a general discussion of the subject.

The following guests and members were present: Drs. G. V. Stryker, St. Louis; G. W. Hawkins and F. L. Harms, Salisbury; J. P. Allen, Cairo; G. M. Ragsdale, J. F. Flynt and M. C. McMurry, Paris; W. R. Langston, R. D. Streeter, L. E. Huber, L. O. Nickell, M. P. Hunter, T. S. Fleming, P. C. Davis, C. C. Smith, L. L. Grzesk and M. E. Kaiser, Moberly.

Following the meeting a light lunch was enjoyed at Miller's Cafe.

M. E. KAISER, M.D., Secretary.

#### FIFTH COUNCILOR DISTRICT

M. PINSON NEAL, COLUMBIA, COUNCILOR

#### Boone County Medical Society

The Boone County Medical Society met in Columbia on January 4 at the Harris Cafe at 6:30 p. m. with Drs. Philip V. Dreyer, State Hospital, Fulton; J. S. Summers, Jefferson City; Ralf Hanks and T. S. Lapp, Fulton, as guests.

Dr. Philip V. Dreyer, Fulton, presented an interesting paper reporting his observations of the use of trypanamide and fever therapy in the treatment of syphilitic psychoses. He reported a number of cases together with controls in which trypanamide alone, fever alone and trypanamide and fever together were used, drawing conclusions that considerable additional observation of

many cases would be necessary before it would be possible to state definitely that fever therapy resulted in a larger percentage of improvement than trypanamide alone. On the basis of his present observation, Dr. Dreyer expressed the opinion that trypanamide alone perhaps resulted in as much improvement in as large a percentage of cases as trypanamide and fever therapy together.

Dr. J. S. Summers, physician-in-chief of the Boy Scouts in Jefferson City, presented an elaborate and extremely interesting travelog of the 1938 national and international Boy Scout Jamborees. Through the medium of colored motion pictures and colored lantern slides equipped with loud speakers and amplifying phonograph records and aided materially by his son who was assistant scout master on the trip abroad, Dr. Summers took his audience on an extremely interesting and instructive trip to Washington, D. C., across the ocean, through the Mediterranean, visiting the International Boy Scout Jamboree in Holland and the National Jamboree in Washington, D. C. Dr. Summers' presentation was remarkably complete and was well received.

#### Meeting of February 1

The Society held its regular monthly meeting at the Harris Cafe. The meeting was called to order at 6 p. m. by the president, Dr. Dan G. Stine.

Dr. W. B. Brown, Columbia, of the program committee, suggested that for several meetings the hour of 6 p. m. be set for the business meeting, followed by the dinner and program, and if approved possibly later on to establish the hour as a regular one. He also suggested that papers presented on the program be limited to forty minutes with discussions of ten minutes each by two members.

Dr. Stine reported that he had been asked by the League of Women Voters to secure an opinion from the Society as to whether it would approve a campaign to establish in Columbia a school for the training of professional people in the requirements of public health administration and work. The request was referred to the committee on legislation for investigation.

Dr. Stine reported that the Columbia Credit Association would like to present a scheme for the handling of overdue and slow accounts. A committee was appointed to investigate the plan and to report at an early meeting.

The secretary read a letter from Dr. M. Pinson Neal, Councilor of the Fifth District, concerning extension workers and other nonmedical groups participating in health programs in which he enclosed a letter from J. W. Burch, Director of the Cooperative Extension Work, to his county agents in which he urged them to seek the advice and help of the president or secretary of the local county medical society in all matters pertaining to health and disease.

After an excellent supper the meeting was turned over to Dr. C. R. Bruner of the program committee who introduced Dr. W. B. Brown, Resident Physician, Student Health Service, Stephens College. Dr. Brown's paper on "Menstruation and Dysmenorrhea" was carefully prepared and extremely well given. He gave a detailed analysis of the entire subject, concluding his paper with a summary of observations during the last five or six years at Stephens College. His treatment of a commonplace and universal problem and his practical suggestions for the solution of such problems provoked an enthusiastic response on the part of his listeners. Discussion was led by Drs. D. A. Robnett and E. W. Cline.

#### Meeting of March 1

The Society held its monthly meeting at the Boone County Hospital.

Dr. F. E. Dexheimer, reporting on the Columbia

Credit Bureau, urged all members to go over the plan carefully and stated that the committee would report at the next regular meeting.

Dr. F. C. Suggett was elected to membership.

Dr. D. A. Robnett spoke briefly concerning the Women's Field Army for the Control of Cancer and its work in Boone County, pointing out that previously the Society had officially endorsed the work. He suggested that similar endorsement be made at the present time. The secretary was instructed to write a letter to Mrs. C. C. Lightner, in charge of the Boone County district of the organization, acquainting her with the action.

The secretary read a letter to Dr. W. B. Brown from President James M. Wood of Stephens College inviting the members to dinner at the Stephens College Country Club on the evening of April 5.

The members were guests of the Boone County Hospital for dinner and an excellent repast was enjoyed. After dinner the meeting was turned over to Dr. C. R. Bruner of the program committee.

Dr. H. McClure Young spoke on "Early Signs and Symptoms of Genito-Urinary Conditions." His method of handling the subject was exceedingly interesting. The possibility of ordinary complaints and even physical findings being early signs of abnormalities in the genito-urinary tract and vice versa opened a new line of thought. Discussion was by Drs. Karl D. Dietrich and Robert Simpson.

M. E. COOPER, M.D., Secretary.

#### Cooper County Medical Society

On March 17, during the morning and afternoon, Drs. Dudley S. Conley and M. Pinson Neal, Columbia, and Eugene P. Hamilton, Kansas City, addressed eleven high school audiences in Glasgow, Fayette (two lectures), New Franklin, Boonville (four lectures), Prairie Home, Blackwater and Pilot Grove on the subject of "Appendicitis."

The Cooper County Medical Society met at St. Joseph's Hospital that evening at 6 o'clock, for a dinner session. After an excellent banquet prepared by the Sisters of St. Benedict, the Society was addressed by Dr. Eugene P. Hamilton, Kansas City, on "The Diagnosis and Treatment of Appendicitis."

Dr. Dudley S. Conley, Columbia, spoke on "Some Problems of Our Medical Organizations." Both addresses were enjoyed and discussed.

Members present were Drs. T. C. Beckett, G. W. Winn, W. E. Stone, C. H. Van Ravenswaay, M. S. McGuire, W. H. Ziegler, H. D. Quigg, G. A. Russell and J. C. Tincher, Boonville; G. L. Chamberlain, New Franklin; Charles Sandy and J. O. Boley, Pilot Grove, and Wm. L. Abney, Blackwater.

Guests were Drs. M. Pinson Neal and Dudley S. Conley, Columbia; Eugene P. Hamilton, Kansas City; Wm. J. Shaw and D. L. Coffman, Fayette, and Thomas J. Kelly, Jefferson City.

#### Meeting of March 30

The Society met at St. Joseph's Hospital, Boonville, March 30 at 7:30 p. m. to consider a plan for medical aid to clients of the Farm Security Administration.

Mr. George A. Tumbelson, District Supervisor of the Administration, appeared before the Society and explained the plan. After discussion and consideration the Society voted to approve the plan.

Members present were Drs. Arie Van Ravenswaay, T. C. Beckett, Alex Van Ravenswaay, Aubrey H. Wells, C. H. Van Ravenswaay, G. A. Russell, H. D. Quigg, J. C. Tincher, Boonville; G. L. Chamberlain, New Franklin; Charles Sandy, Pilot Grove, and Wm. L. Abney, Blackwater.

J. C. TINCHER, M.D., Secretary.

#### SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

##### Bates County Medical Society

The Bates County Medical Society met in the City Council Room at Butler, March 15, with the president, Dr. C. J. Allen, Rich Hill, presiding.

The following officers were elected: President, Dr. E. E. Robinson, Adrian; secretary and treasurer, Dr. Chas. A. Lusk, Jr., Butler; delegate, Dr. T. J. Halsey, Butler; alternate, Dr. Chas. A. Lusk, Jr., Butler.

Following the business session the Society adjourned for a dinner and program.

Drs. E. R. Deweese and Hubert M. Parker, Kansas City, were guests of the Society and gave an excellent presentation of "Clinical and Roentgen Ray Studies of the Chest."

CHAS. A. LUSK, JR., M.D., Secretary.

##### Lafayette County Medical Society

The Lafayette County Medical Society met in Oak Grove on March 22 for its regular monthly session.

Dr. Herbert J. Rinkel, Kansas City, was a guest of the Society and spoke on "Food Allergy." The address was illustrated with slides.

A delightful social hour was spent by the Society and the Auxiliary at the home of Dr. and Mrs. Odus Liston, Oak Grove.

E. S. WALLACE, M.D., Secretary.

#### EIGHTH COUNCILOR DISTRICT

H. L. KERR, CRANE, COUNCILOR

##### Greene County Medical Society

The Greene County Medical Society met at the Federal Hospital, Springfield, February 25 at 7:30 p. m. The meeting was called to order by the president, Dr. A. W. Gifford.

The applications for membership of Drs. E. L. Simpson and Joseph Sicheluff and a transfer from the Tulsa County Medical Society of Dr. Marvin L. Napper were read and approved unanimously.

Dr. M. R. King, superintendent of the Federal Hospital, was introduced and presided over a scientific program presented by members of the Federal Hospital staff. Dr. King briefly reviewed the work of the Board of Classification. This board, after a complete physical and psychiatric examination of each patient, detail them to the institution that can most ably meet the individual need for readjustment, the Federal Hospital at Springfield receiving the most critically physical and mental maladjusted.

Several interesting cases were presented including syphilis in all stages, psychoneurosis, melanosis of the finger metastasizing to the lung, suppurative gonorrhea, inguinal adenitis, old spastic hemiplegia with paroxysmal spasticity of the abdominal muscles, a brain tumor, central muscular atrophy, basal cell epithelioma and other cases of marked interest. Each case presentation was accompanied by a detailed and carefully taken history and complete physical examination with laboratory and roentgen ray findings. Diagnosis, treatment being pursued and progress of the patient under treatment were given. It was evident that these patients receive the best diagnostic and therapeutic measures that modern medicine affords.

The following members were present: Drs. A. W. Gifford, W. S. Sewell, D. L. Yancey, E. L. Evans, Wm. Kelly, E. E. Glenn, W. R. Beatie, G. B. Lemmon, M. C. Stone, U. J. Busiek, G. M. Powell, F. T. H'Doubler, J. W.



Love, R. L. Russell, T. H. Romeiser, L. F. Heimbürger, R. N. White, J. D. Horton, W. E. Taylor, T. O. Klingner, O. C. Horst, M. J. Atherton, Souter Smith, Wallis Smith, W. J. Wills, Joseph Siceluff, Springfield, and Dr. King and ten members of the associate staff of the Federal Hospital.

J. L. JOHNSTON, M.D., Secretary.

### Jasper County Medical Society

The Jasper County Medical Society was called to order by the president, Dr. B. E. DeTar, at the Connor Hotel, Joplin, April 12.

The application for membership of Dr. Leroy Simmons, Sarcoxie, was approved and he was elected to membership.

Dr. S. A. Grantham, Jr., Joplin, chairman of the committee on public health and legislation, reported that his committee had gone as far as authorized in regard to the establishment of clinics under the supervision of the Society and requested further instruction. The report was accepted.

Dr. Lloyd B. Clinton, Carthage, reported that WPA officials were requesting the filling out of eight blanks for all charity cases in Carthage but that he had refused the request.

Dr. Charles T. Reid, Joplin, gave a paper on "Tininitus Aurium" after which Dr. Paul F. Fletcher continued the Refresher Course in Obstetrics.

M. H. BLACK, M.D., Secretary.

### NINTH COUNCILOR DISTRICT

W. H. BREUER, ST. JAMES, COUNCILOR

The Phelps-Crawford County Medical Society was host to the physicians of the Ninth Councilor District at Rolla, April 11.

During the morning and afternoon lectures on "Appendicitis" were presented before students in sixteen high schools in the community, located in Rolla, St. James, Steelville, Cuba, Bourbon, Bland, Owensville, Vienna, Dixon, Crocker, Richland, Waynesville, Newburg, Salem and Licking. Physicians presenting the lectures were Drs. E. Lee Miller, Kansas City; Avery A. Drake and A. S. McFarland, Rolla; A. R. McComas, Sturgeon; W. H. Breuer and Emil A. Stricker, St. James; Dudley S. Conley and M. Pinson Neal, Columbia; Frank G. Mays, Washington; Ross A. Woolsey, St. Louis, and Leslie Randall, Licking. Approximately 5000 students attended these presentations.

At 4 p. m. Dr. Ellis Fischel, St. Louis, Chairman of the Missouri Committee of the American Society for the Control of Cancer, delivered a public lecture at Parker Hall, School of Mines, Rolla. Mrs. David S. Long, Harrisonville, State Commander of the Women's Field Army, was present at this lecture.

A social hour was held from 5:30 to 6:30 p. m. at the Edwin Long Hotel, Rolla, after which a dinner was served to the physicians.

Following the dinner Dr. Dudley S. Conley, Columbia, spoke on the survey of medical care being conducted by the American Medical Association through the assistance of the state associations and county medical societies.

Dr. E. Lee Miller, Kansas City, spoke on "Hepato-renal Syndrome in Relation to the Liver Death."

### Phelps-Crawford County Medical Society

The Phelps-Crawford County Medical Society met at Rolla at the Rolla Hospital on March 14.

Following a dinner which was served to the Woman's Auxiliary and the Society by the hospital management the routine monthly business was transacted.

Dr. M. Pinson Neal and Dr. Richard S. Battersby, Columbia, were guests of the Society. Dr. Neal spoke on "Anemia" and Dr. Battersby on "Diarrhea in Children."

The following members and visitors were present: Drs. A. E. Oliver, Richland; Cyrus Mallette, Crocker; A. J. Crider, Dixon; R. E. Breuer, Newburg; A. S. McFarland, E. E. Feind, S. L. Mitchell, J. E. Smith, A. A. Drake, Rolla; F. E. Butler, G. J. Joseph, Salem; Leslie Randall, Licking; W. R. Ferrell, Belle; A. H. Horne, Steelville; L. L. Henson, Bunker; E. L. Hume, Bourbon; W. F. Irwin, Bourbon, and C. W. Meinershagen, Jefferson City.

R. E. BREUER, M.D., Secretary.

### TENTH COUNCILOR DISTRICT

A. H. MARSHALL, CHARLESTON, COUNCILOR

#### Cape Girardeau County Medical Society

The Cape Girardeau County Medical Society met February 14 at the Colonial Tavern, Cape Girardeau. After a chicken dinner the president, Dr. D. H. Hope, called the meeting to order.

Dr. E. M. Bryan, representing the State Board of Health, presented a plan for treating indigent people afflicted with venereal diseases. He explained that the state is to be divided into thirteen districts in each of which a group clinic is to be established. Further than this, free examination of school children is to be incorporated in the plan. The question was referred to the board of censors for examination and report.

A representative of the Red Cross sent a message to the Society asking support of a plan to have certain members of the Society give instruction to nurses who would be placed in units and stationed along the highways to give first aid to victims of automobile accidents. This matter was referred to the board of censors.

Dr. Willis C. Campbell, Memphis, Tennessee, was a guest of the Society and spoke on "Intracapsular Fractures of the Neck of the Femur." After giving a résumé of the history of the treatment of these injuries he explained the treatment by means of uniting the neck and head of the femur with a nail. The lecture was interesting and educational and was illustrated with lantern slides.

Members and guests present were Drs. Willis C. Campbell and Harold B. Boyd, Memphis, Tennessee; H. K. Tom, Delta; E. M. Bryan, Jefferson City; J. J. Bredall, Perryville; Rusby Seabaugh and D. I. L. Seabaugh, Jackson; C. D. Nobles, P. M. Nation, A. Barnett, J. W. Davis, Berry V. Rife and W. J. Benner, Anna, Illinois; W. W. Ford, Gordonville; W. C. Dieckman and Frank LaRue, Dexter; E. J. Nienstedt, Sikeston; George A. Sample, Chaffee; Edward Crites, Sedgewickville; C. T. Herbert, D. B. Elrod, D. H. Hope, Frank W. Hall, Paul B. Nussbaum, M. H. Shelby, G. J. Tygett, O. L. Seabaugh, H. V. Ashley, J. H. Cochran, G. W. Walker and W. H. Wescoat, Cape Girardeau.

C. A. W. ZIMMERMANN, M.D., Secretary.

### Stoddard County Medical Society

The Stoddard County Medical Society met March 29.

The following officers were elected: President, Dr. Wm. J. Hux, Essex; vice president, Dr. S. S. Davis, Dexter; secretary-treasurer, Dr. Frank LaRue, Dexter; delegate, Dr. T. L. Waddle, Dexter; alternate, Dr. W. C. Dieckman, Dexter.

FRANK LARUE, M.D., Secretary.

## WOMAN'S AUXILIARY

### WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

16th Annual Meeting, San Francisco, June 13-17, 1938  
President, Mrs. Augustus Kech, Altoona, Pennsylvania.

President-Elect, Mrs. Charles C. Tomlinson, Omaha, Nebraska.

### WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

14th Annual Meeting, Jefferson City, May 3-4, 1938  
President, Mrs. Charles H. Werner, St. Joseph.  
President-Elect, Mrs. Herbert L. Mantz, Kansas City.

#### Program

Headquarters: Senate Lounge, Capitol Building

#### Monday, May 2

7:00 p. m. Informal reception on Mezzanine Floor, Missouri Hotel, Cole County Auxiliary, hostesses.

#### Tuesday, May 3

8:30 a. m. Registration, Senate Lounge, Capitol Building.

10:00 a. m. Meeting of the Executive Board. Invocation, Mrs. John Zahorsky, St. Louis.

12:30 p. m. Luncheon at Petit's Cafe.

Invocation: Mrs. Harry M. Gilkey, Kansas City.

Address: "Conference on Better Care for Mothers and Babies," Mrs. George H. Hoxie, Kansas City.

Address: "State Board of Health Program for Maternal and Child Welfare," Dr. James W. Chapman, Jefferson City.

3:30 p. m. Tea at the Governor's Mansion, Cole County Auxiliary, Hostesses.

6:00 p. m. "Bring-Your-Husband Dinner," Missouri Hotel.

Invocation: Mrs. A. D. Knabb, Springfield.

Address: Rev. Alphonse M. Schwitalla, S. J., Dean, St. Louis University School of Medicine.

8:30 p. m. Entertainment and Dance, Missouri Hotel, Cole County Medical Society, hosts.

#### Wednesday, May 4

8:30 a. m. Registration in Senate Lounge.

9:00 a. m. General Meeting in Senate Lounge.

Invocation: Mrs. Stanley P. Howard, Jefferson City.

Address of Welcome: Mrs. Herman S. Gove, Jefferson City.

Response: Mrs. A. H. Horne, Steelville.

Business Session: Reports, business, election of officers.

Memorial Hour: Mrs. Paul F. Cole, Springfield.

1:00 p. m. Annual Auxiliary Luncheon, Christian Church.

Invocation: Mrs. J. C. Smith, St. Joseph.

Guest Speakers: Dr. Dudley S. Conley, Columbia, President, Missouri State Medical Association;

Dr. B. W. Hays, Jackson, President-Elect, and

Dr. W. L. Allee, Eldon, Adviser to Woman's Auxiliary.

Address: "Public Health, Today and Tomorrow," Dr. W. W. Bauer, Chicago.

"Au Revoir": Mrs. J. W. Lightner, Odessa.

3:00 p. m. Post Convention Board Meeting, Mrs. Herbert L. Mantz, Kansas City, presiding.

3:00 p. m. Tour of the Capitol and lecture on the Benton murals.

Mrs. Herman S. Gove, Jefferson City, Convention Chairman, calls attention to the fact that any woman attending the convention may enter the golf, bowling or skeet shooting while in Jefferson City.

The Buchanan County Auxiliary has cooperated with the Woman's Field Army in sponsoring two meetings on cancer, and has cooperated with the guild of St. Joseph's Hospital in a third meeting. Speakers were Mrs. David S. Long, Harrisonville; Dr. Floyd Spencer, St. Joseph, and Dr. Ellis Fischel, St. Louis.

Mrs. Orr Mullinax of the Buchanan County Auxiliary arranged for Dr. Floyd Spencer, St. Joseph, to talk on cancer before a large group at Plattsburg. Films were shown.

Mrs. C. H. Werner, St. Joseph, arranged for talks on mental hygiene before six groups in St. Joseph in connection with the organization of a mental hygiene association. The speakers were Dr. F. A. Carmichael, Fulton, and Mrs. Helen H. Sala.

At the request of Dr. George H. Kress, editor of *California and Western Medicine*, Mrs. C. H. Werner sent a half column article on the year's activities of the Missouri Auxiliary.

The National Convention in San Francisco promises a number of interesting features including a trip through Chinatown and a sixty mile ocean trip.

## BOOK REVIEWS

MATERIA MEDICA PHARMACOLOGY THERAPEUTICS AND PRESCRIPTION WRITING. For Students and Practitioners. By Walter Arthur Bastedo, Ph.M., M.D., Sc.D., F.A.C.P., Consulting Physician, St. Luke's Hospital, New York, St. Vincent's Hospital, Staten Island, and the Staten Island Hospital. Fourth edition, reset. Philadelphia and London: W. B. Saunders Company. 1937. Price \$6.50.

This new fourth edition of a well known popular textbook written by a clinician, brings to anyone practicing medicine and having the will to learn and means whereby he can improve almost daily, the results of therapeutic efforts. Only a minimum of materia medica is given but a maximum of pharmacology and the therapeutics derived in part from it when applied clinically, are given. In prescribing we should be interested in the body mechanisms involved and just how results are obtained. Much of pharmacology has no useful application and the success of some drugs cannot always be explained although the gap is being constantly narrowed.

Cushing says, "The object of pharmacology is to explain the mysteries of therapeutics . . . at the bedside or in the laboratory." The author has arranged his material in such a way as to achieve this end by introducing before a chapter on cathartics the mechanical features of defecation and summarizing jointly the physiology and therapeutics involved in various places. Before discussing circulatory drugs he devotes several pages to the physiology and pharmacology involved. In recent years study of the autonomic system and its dysfunction has brought forth a large number of new drugs and modifications of the old ones for use in various spasticities, etc. The physician finds it difficult to understand their action because he cannot simultaneously visualize the complicated physiology. To overcome this the author gives a condensation of the



autonomic system and immediately follows this with a section of the chemical mediation of the nerve impulses thus paving the way for understanding the action of drugs like epinephrine and ergotoxine mechoyl, the belladonna group, etc. Frequent summaries given are helpful and the italicized word is used effectively in pointing the final finger toward rational therapeutics. The surgeon has presented for his special interest the action of epinephrine in circulatory collapse, a chapter on shock collapse and means used to increase blood volume in arteries.

To the individual drugs considered in Part II there have been added some twenty odd new ones; about fifteen have been rewritten and great detail given to some four or five others. One fifth of the space is given to drugs affecting the circulation where the newer ideas about digitalis have been incorporated. He puts into a nutshell the necessary things to know about this drug when he says it does not cure the disease but modifies heart action; enables the heart to do more work with the same energy expenditure and has its chief indication for full use in heart failure and a smaller dose for threatened failure. He composes in a sentence the controversy which raged for years as to whether digitalis acted as a stimulant or a sedative. It was this supposedly understood action of the drug that led to its wide misuse. The reader will find other articles such as those on iron hormones, disinfectants and antiseptics of practical interest.

Part III is devoted to prescription writing where he stresses the uncertainty of "drops" as a measure. He describes the new official pharmacopeial dropper designed for watery liquids (4 drops per 3 minims) but not for tinctures which require eight drops to make three minims and says the U. S. P. XI does not sanction the prescribing of doses by drops. Under digitalis, Part II, he devotes another page to the inadequacy of droppers and in summing up rules (14) for successful use of the drug advises that the tincture should never be used by drops. On page 716 is given the new N. F., iso-alcoholic elixir, suitable as a vehicle for tinctures like digitalis when teaspoon doses are prescribed.

The physician who wishes to escape from empiric prescribing when possible and indulge himself in the highly interesting and profitable experience of approaching his therapeutic problems as the pharmacologist does will find in this book a means to that end. There are many worth while "new" things and most physicians probably improve themselves by a new consideration of the old. He can secure both by a self administered refresher course at will and at home.

S. L.

**INTERNATIONAL CLINICS.** A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles by Leading Members of the Medical Profession Throughout the World. Edited by Louis Hamman, M.D., Visiting Physician, Johns Hopkins Hospital, Baltimore, Md. Volume III. Forty-Seventh Series, 1937. Philadelphia, Montreal, London: J. B. Lippincott Company.

The first part of this excellent book takes the reader to a series of nine medical clinics at the Johns Hopkins Hospital. The cases are thoroughly worked up and the discussions are concise but complete with stress on the diagnosis and treatment. The statement that approximately 10 per cent of the population has amebiasis seems rather high especially in this section of the country but the discussion of treatment is well worth reading. Particularly interesting to the reviewer was the differential diagnosis of acute polyarthritis. If the facts from these few pages were firmly imprinted in the mind of the clinicians of this country the disability from arthritis could be considerably lessened.

The major portion of the volume discusses various

other diseases which are mainly of interest to the internist. Tuberculosis, syphilis, coronary thrombosis, diabetes and endocrine therapy are of course in evidence. In spite of the flood of literature at the present time on peripheral vascular diseases a discussion by Louis Herrmann is very instructive.

The illustrations with a colored frontispiece are of excellent quality.

The volume contains many excellent papers and can be recommended to all clinicians especially those interested in internal medicine.

C. F. L.

**INTERNATIONAL CLINICS.** A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles. By Leading Members of the Medical Profession throughout the World. Edited by Louis Hamman, M.D., Visiting Physician, Johns Hopkins Hospital, Baltimore, Md. Volume IV. Forty-seventh Series, 1937. Philadelphia Montreal London: J. B. Lippincott Company.

Since many of us are unwilling to make a diagnosis of pellagra unless the three "D's" (dermatitis, diarrhea and dementia) are present the leading article is most helpful. Drs. Tom Douglas Spies and Clark Cooper of Cincinnati clearly point out the early diagnostic features of pellagra which will aid us in early treatment which is so essential. Case reports are profusely illustrated.

In these days of the "unbalanced budget" with the resultant unbalancing of our nervous system we can all profit by carefully reading the three articles on hyperthyroidism.

The reviewer questions the simplification of the approach to "Menstrual Disorders" by Dr. John C. Burch, of Nashville, Tennessee.

The surgeon will profit much by reading the eight articles on the "Surgical Abdomen," especially the article by Carl DaCosta Hoy, Columbus, in which he reviews the subject of "Ileus (Bowel Obstruction)."

There are two articles that appeal to pediatricians especially and three on infectious diseases, two on urology and ending with the clinics of Dr. Louis Frank, Louisville, Kentucky.

E. A. B.

**OBSTETRICS FOR NURSES.** By Joseph B. DeLee, A.M., M.D., Professor of Obstetrics and Gynecology, Emeritus, University of Chicago, etc., and Mabel C. Carmon, R.N., Chief Supervisor and Instructor in the Birthrooms, Chicago Lying-in Hospital and Dispensary. Eleventh edition, revised and reset. Philadelphia and London: W. B. Saunders Company. 1937. Price \$3.00.

This very popular book for nurses' instruction has been entirely revised and reset. Dr. De Lee has obtained the collaboration of Miss Mabel C. Carmon, who, as supervisor of delivery room at the Chicago Lying-In Hospital for many years, is especially fitted in presenting the subject matter regarding hospital delivery technique.

The book, though primarily a textbook on obstetrics for nurses, has for years been a manual of obstetrical technic, preparation of supplies and of special procedures. Its detailed and precise directions make it invaluable both to doctor and nurse.

There are many new excellent drawings and illustrations and especially the strip illustrations of normal labor, delivery of placenta and forceps delivery deserve special mention.

The author has been careful to revise and include the recent advances in endocrinology and has incorporated the more recent ideas in treatment.

The nurse's duties in hemorrhage, toxemia of pregnancy, puerperal infection, management of the newborn and the premature child are especially well presented.

P. A. G.

# THE JOURNAL

OF THE

## Missouri State Medical Association

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### HISTORY OF THE MISSOURI STATE MEDICAL ASSOCIATION

ADDRESS OF THE PRESIDENT

DUDLEY S. CONLEY, M.D.

COLUMBIA, MO.

Just as we sometimes do in our own lives when we review them, perhaps it would be well to look back briefly over the span of life of our State Medical Association.

In 1836 a group of progressive medical men in the City of St. Louis sent out a general invitation to the physicians in the State of Missouri to attend a convention with the purpose of forming a state medical society. About 150 doctors accepted this invitation and the first Medical Society of the State of Missouri was born and incorporated January 25, 1837, eleven years before the formation of the American Medical Association.

This society had as its object the improvement of the profession of medicine. Elected as its first president was Dr. Bernard Gaines Farrar, the first American born physician to settle west of the Mississippi. Dr. Farrar, a man of eminent ability and culture, is often called the "father of the profession in Missouri."

Equally important was the election of Dr. John B. Johnson as corresponding secretary. He was recognized as a leader and through his zealous efforts, then and later, he contributed largely to the elevation of professional standards.

In spite of the high ideals and the worthy objectives of this first group founded for an organized profession in the state, the newly formed society was in reality a local organization. Meetings were held irregularly until 1846 when it was disbanded to be later reorganized as the St. Louis Medical Society.

In those early days of our state, outside of the few urban communities, the physician was an isolated individual administering to people in large areas as one community. Communication was difficult and transportation slow and unsafe. There was little opportunity for him to meet with his brother

physicians for exchange of ideas and methods. It was probably for these reasons that the first attempt toward an organized profession was abortive. Nevertheless, these very reasons were recognized by the more far sighted members of the medical profession as being the most important needs for a closer knit relationship of the individual practitioners. Exchange of ideas and knowledge was necessary for the good of the profession, and it was not long before such ideals were made into realities.

In July, 1850, a number of members of the St. Louis Medical Society assembled and appointed a committee to devise means to reorganize the state group. This committee was composed of some of the most distinguished men in the history of Missouri medicine. The chairman was the dynamic W. M. McPheeters, a prime mover in the State Association's organization. He was a cofounder of the first public dispensary in Missouri. He was a constant contributor to medical literature and his "History of Epidemic Cholera in St. Louis," describing the epidemic of 1849, is still considered a medical classic of its kind.

Others on this committee were S. Gratz Moses, George Engelman and George Penn, distinguished and able men.

The committee drew up a constitution and issued invitations to physicians in the state to a convention called on November 4, 1850. This convention was attended by approximately 100 physicians from eighteen counties. A constitution and by-laws, patterned after those of the American Medical Association, were adopted and the society was titled the Medical Association of the State of Missouri.

The first officers of the Association were men of progressive views, eager to sponsor constructive measures for the elevation of the profession. Dr. W. G. Thomas, Boonville, an outstanding physician in central Missouri, was elected president. Equally fortunate choices were those of Dr. J. S. B. Alleyne, St. Louis, as one of the secretaries, and Dr. John Barnes, St. Louis, as one of the vice presidents.

The first meeting of the new Association was held in Boonville in 1851. The minutes of the sessions in this meeting show that the members of the profession recognized and acknowledged the weaknesses of the profession and were anxious to remedy and



strengthen them. The problems discussed at this first Annual Meeting were:

1. Relations of the apothecary and the physician.
2. The inspection of drugs and the control of their sale.
3. The organization of county medical societies.
4. The collection of vital statistics by the state. (This was urged by the Association in 1851, was still being urged in 1894 and was finally enacted by the legislature in 1909.)
5. A petition to the General Assembly for the passing of a law providing that "No one be permitted to practice medicine, surgery or midwifery, in the state unless he be a graduate of some medical faculty, college, or university in the state; or if a physician from another state or Europe, he shall undergo a medical conversation, colloquium doctum, besides presenting his diploma, before a committee appointed by the government of the state. In deficiency of this satisfactory evidence, he shall undergo a thorough examination before said committee of examination."

In the act creating the Board of Health more than thirty years later, the legislature incorporated such regulatory provisions.

Subsequent meetings were held in Lexington (1854 and 1856) and St. Joseph (1857). All the other annual meetings were held in St. Louis. Due to the unsettled social and economic conditions prior to and during the Civil War the Association lapsed, the last meeting being held in St. Louis in 1858.

In 1867 the St. Louis Medical Society again took the initiative in a movement to revive the State Association and a committee of such distinguished men as Drs. M. L. Pallen, J. R. Washington, E. Montgomery, R. S. Anderson, J. M. Youngblood, G. F. Dudley and John J. McDowell was appointed to plan for the reorganization.

A convention was held December 10, 1867, and again a Boonville physician was elected president, Dr. G. A. Williams, a notable figure in the history of the State Association.

There have been no further lapses in the meetings since 1867. Through the years the Association has contributed in a large measure to the enactment of salutary laws for the protection of public health as well as for increasing the efficiency of medical colleges and elevating the professional standards in the state and in the United States.

These noteworthy achievements of the Association were not won easily. The struggling small group fought bitterly and unceasingly, sometimes gaining their objectives only to lose them a little later. Year after year the same problems of regulating licenses, the stiffening of requirements of medical education, the formation of a State Board of Health, the enactment of legislation requiring the filing of vital statistics, the enactment of laws establishing state eleemosynary institutions, the elimination of quacks and charlatans from the

ranks of the profession, came up with monotonous regularity.

Yet these questions were discussed patiently and earnestly by the Association and resolution after resolution seeking to remedy and improve such conditions were sent to the legislative bodies of the state petitioning them for the enactment of laws for the general good of the people in the state as well as for the good of the profession.

Due to the apathy of the people in general and the General Assembly in particular, coupled with the stubborn selfishness of many individuals in the profession itself who themselves were sadly lacking in the professional attainments which such legislation would require and who feared for their own future if professional standards were raised, the gains of the Association were slow.

In 1878 under the leadership of Dr. E. W. Schauffler, Kansas City, the Association met in Sweet Springs with 105 delegate members present. At this meeting a special committee appointed to investigate the facilities of medical schools reported the following facts: Of the twelve schools chartered under the laws of the state, only four were recommended to the Association as being worthy of recognition as representative of legitimate medicine in Missouri. These four schools were the only ones cooperating with the policy, established in 1877, of the Association of American Medical Colleges in an attempt to raise the standards of the medical colleges by uniform requirements in the courses of study and for graduation.

Under state law, boards of curators and the faculties determined the requirements for graduation of all the schools and, as a consequence, schools with inadequate facilities, unqualified faculties and insufficient courses were granting diplomas to their graduates who, under the law of the state, were licensed to practice medicine.

In 1879, at the Annual Meeting in Columbia, we find renewed attempts for securing a State Board of Health. Dr. G. M. B. Maughs, president of the Association, appointed a committee of five to draw up a bill and confer with legislative leaders in an attempt to secure its passing at the next General Assembly.

At this meeting the Committee on Medical Education further reported on the status of medical education. The committee in part brought to the attention of the Association that general dissatisfaction was felt among medical men here and elsewhere with the status of medical education and that our system of medical education was not worthy of respectful notice abroad where much better systems prevailed. They also said that as long as the number of schools competed, unrestricted by law, nothing could be done. The committee hoped to see all the schools of the state adopt a plan requiring graduates in medicine to have diplomas in arts, sciences and languages from some reputable college.

Dr. Maughs also appointed a committee to write

letters to doctors in each Congressional District urging them to establish district or county medical societies.

In 1880 the Committee on the State Board of Health reported that great apathy was existing in the legislature, the state at large and in the profession in regard to the State Board of Health. This committee recommended that each member instruct the people in his community and the legislative representative of his district about the necessity for such a law. The committee also asked that it be continued for another year so that it could continue its work.

In the report of the Committee on Medical Education in 1880 we find that there were 3000 physicians practicing in the state. There were 619 medical students in seven schools and 215 medical graduates.

The Mexico meeting in 1881 voted to ask the medical faculties in the state to submit examinations to a board of censors and make them a matter of record. A resolution was adopted to appoint a committee to draft a bill providing for the regulation of the practice of medicine and medical education in Missouri and to submit it to the next biennial meeting of the General Assembly. Also an amendment to the Constitution was proposed: "No physician shall be eligible to the State Association who is not a member of a county society, providing there be such an organization in the county in which the applicant lives. Also that unless he be a member of the State Association he shall not be eligible to membership in the American Medical Association."

In 1882 one hundred fifty-one delegates met in Hannibal. Most of this meeting was devoted to a discussion of strict application of medical ethics as applied to consulting and fraternizing with practitioners of the homeopathic, eclectic and nondescript schools. The president's annual address, delivered by Dr. A. E. Gore, was entitled "Quacks and Quackery," and it presented illuminating facts about the conditions existing in the state due to the lack of regulatory statutes in regard to the practice of medicine.

The president had sent out questionnaires to doctors in 114 counties and had received answers from doctors in 102 counties. The replies showed the following statistics:

Total number of people practicing in Missouri	4834
Total number of men	4679
Total number of women	155
Graduates of regular school	3453
Graduates of eclectic school	581
Graduates of homeopathic school	217
Graduates of nondescript schools	583
Graduates of reputable regular schools	2546
Number of men	2526
Number of women	20
Practitioners known to be or suspected of producing abortion	269
Number of men	230
Number of women	39

One thousand nine hundred four practitioners of the regular schools were deemed incompetent by competent judges and unworthy to represent the profession. The income of incompetent physicians, quacks and charlatans, per year, was estimated as \$1,184,000.

These collected statistics and material were presented to the General Assembly in an attempt to strengthen the state licensing laws.

In 1883 the state legislature at last passed an act establishing the State Board of Health. For this work \$6000 was appropriated. However, this triumph of the Association was short lived for the legislature did not appropriate any more money for the Board until 1889. The Veterinary Board in the meantime received full appropriations and the president of the Association in 1888 called this fact to the members' attention saying that the animals of the state were taken care of much better than the people.

In 1887 the Committee on State Medicine reported that the Special Committee on the Anatomy Act had succeeded in having a bill introduced and passed by the General Assembly providing for the use, by medical schools, of the unclaimed bodies of deceased persons.

At the Kansas City meeting of 1888 the largest number of members registered since the beginning of the Association. There were 266 delegate members from all sections of the state. At this meeting the Association approved of a plan of the State University Experimental and Vaccine Laboratory offering to produce animal vaccine quarterly and to establish regular vaccination dates. A resolution was passed to petition the legislature to appropriate funds to the laboratory so that educational, state and charitable institutions and public health officers could receive free vaccine, and that vaccine be made available to doctors at a minimum cost.

The Association pledged anew its support of the State Board of Health and promised to exert influence for legislative action in support of the Board in their own communities, and appointed a Committee on Sanitary Affairs to sit with the Board and advise concerning needed legislation for the protection of public health.

In 1891, the By-Laws having become unwieldy due to frequent additions, a committee was appointed to revise the By-Laws and the Constitution and present a report at the next Annual Meeting.

At this meeting the Association resolved to request the State Board of Health to construe the term "medical college in good standing" to mean a college that required its matriculates to attend at least three graded courses of lectures and clinics of not less than three months each, no two of which should be in the same year.

In 1892 the Committee on State Medicine reported that an amendment to the state asylum laws, providing for a board of managers, was assured of passing the General Assembly. The Association



went on record again in favor of an asylum for feeble-minded children.

Dr. W. H. Evans, president in 1893, in his annual address gave some interesting statistics about the growth of the State Association:

Average attendance at annual meetings, 1888-92 (5 years)—185.

Growth in the population of Missouri, 1882-92 (10 years)—23 per cent.

Growth in the membership of the State Association, 1888-92 (5 years)—40 per cent.

Growth in membership from Kansas City and St. Louis, 1888-92—73 per cent.

Growth in membership from rural Missouri, 1888-92—10 per cent.

These statistics proved, he said, that interest in medical societies was dying out in rural Missouri. He urged more diversified programs at the State Association's annual meetings believing that the revival of interest should begin with the State Association.

In 1893 the General Assembly appropriated funds for the State Board of Health but repealed parts of the original law which required doctors to make returns of births and deaths. The work for vital statistics registration had to begin all over again.

The 1892, 1893, 1894 and 1895 sessions discussed the division of the membership into two sections, medicine and surgery, with separate rooms for their essays. The increased attendance at the meetings and the number of papers being read caused confusion and difficulty in arranging a program. A constitutional amendment to this effect had been proposed at each of these meetings but was tabled.

From 1891 until the present time we find each yearly meeting of our Association confronted with problems not unlike those which face us today, but time forbids going into those in detail. A few of these high lights may be enumerated.

1. In 1896 Dr. John H. Duncan, St. Louis, deplored the waning interest in the Association.

2. In 1900 the Association resolved to petition the General Assembly to enact the following: (a) Create a Board of Health repealing the old law. (b) Appoint seven reputable physicians to constitute a Board of Health. (c) Empower the Board of Health to appoint two physicians in each county who with the county school commissioner and the county judge would constitute a county board of health. (d) The State Board of Health to have general supervision over the sanitation and health interests of the state, with power of quarantine and public notification of epidemics and contagions.

3. Always there was an attempt to raise the standards of medical education and licensure. In 1901 the Hall Bill provided for the following: (a) Licensing was taken away from the colleges and given to the State Board of Health. (b) The bill established the fact that all who profess or attempt to treat the sick are physicians under the law and subject to police control, whether they administer drugs or not. (c) It empowered the

State Board of Health to say who is fit and who unfit to practice, and to base their decision solely upon examination, and gave them power to revoke licenses for cause.

Following the inspection of schools, begun in 1905 and continued up to now, we find that the number of medical schools in Missouri has been cut to three, whereas in the history of the state there has been a total of forty-four schools, exceeded only by New York with forty-five, and tied with Illinois with forty-four.

4. In 1903 the reorganization of the State Association took place. The membership had grown to 2900 and the state was divided into sixteen councilor districts.

5. In 1904 five hundred seven members attended the annual meeting, the largest number ever to register up to that time. The publication of the "Transactions" was discontinued, and *THE JOURNAL* of the Missouri State Medical Association was begun.

6. In 1910 the president, Dr. Tinsley Brown, Hamilton, called attention to the second annual report of the American Medical Association's Council on Medical Education which reported that "it is evident from the study of the medical colleges in this country and their work, that there are five rotten spots in this country which are responsible for most of the bad medical instruction. They are Illinois, Missouri, Maryland, Kentucky and Tennessee." The report further states, "The principal cause for this bad work is found in the existence of medical schools for profit, and profit is only possible where the college fails to provide proper facilities for laboratory and clinical training."

Since that time just as many important things have happened, but these are within the memory of most of us, and while the transactions show there have been many differences in opinion, yet there has been a steady, healthy growth. This will continue.

It is evident from this summary that the Missouri State Medical Association, from its founding to the present day, has assumed the responsibility of removing the most glaring obstacles to the professionalization of medicine in Missouri. Its legislative program was, and is, significant, and while the results have been commendable, it is not more outstanding than the provisions made for scientific and professional growth. The Association has kept pace with the development of scientific medicine and through its specialized committees and the worthwhile papers read at each session, the members of the Association have benefited by the mutual exchange of knowledge, technics and methods discovered and developed from time to time. These reports and papers printed in *THE JOURNAL* of the Missouri State Medical Association are a record of the progressiveness of our Association.

For the last thirty-five years there has been one man who has been responsible for a great deal of the growth and progress of the Association and for

the development of *THE JOURNAL*. Elected assistant secretary in 1903, the year the Association was reorganized, Dr. E. J. Goodwin has given devotedly of his service as an officer of the Association. He has served as associate editor of *THE JOURNAL*, and since 1910 has been secretary-editor. I am informed by Dr. Olin West, Secretary of the American Medical Association, that his records show that no other state association secretary has held office as long as Dr. Goodwin.

But let me go back for a moment to the year 1888 when as your president you had one of the outstanding physicians of all times, Dr. A. W. McAlester, Columbia, Dean of the University of Missouri School of Medicine, a great surgeon but a greater teacher, one who always believed and fought for higher standards of medical education and medical ethics. He has fitly been named the "Father of the University of Missouri School of Medicine." Let me quote from his presidential address:

As to women in medicine, "Is the practice of medicine her field? I answer 'no'; and as a profession we should discourage it. The irregular demands of our profession are inconsistent with the needed regularities of her delicate organization; she cannot bear the constant strain." Dr. McAlester explained that he did not mean that women were intellectually inferior or less intelligent than men, but merely physically inferior.

Comparing the American doctor to a farmer who carefully cultivates and tills the soil in which he grows his crops, Dr. McAlester said in reference to improving the profession: "To become a successful M.D. implies not only good soil, but good culture also. All culture and no soil makes Jack a dull boy; all soil and no culture reaches the same undesirable end."

In speaking of medical education he said, "When the scientific part of medicine has fully gotten hold of the medical body, the intelligent world will fully recognize it. Before science can be taught, the prerequisite of a common education must be fully recognized." He stressed the point that people take up with quacks because they say the experts are divided, thus throwing the sin back on the medical profession. "Get ourselves right and respect will flow to us," he declared.

In these fifty years the School of Medicine has progressed and improved as I am sure he would have wished it.

Our Association, according to history, is 101 years old. According to law it is 88 years of age. In either category it is entitled to aid under the Old Age Pension Act. It cannot qualify as to lack of income, for financially it is reasonably secure, but there is another factor in the tragedy of old age where our Association is not secure. We do not own nor do we have a home which we call our own.

I can imagine no more ideal thing for this Association than the acquisition of such a permanent residence; no large office building but a small dwelling away from a crowded business street with rooms

for our secretarial and editorial staff, a library with periodicals where one might feel free to drop in and inform himself on current medicine or secure references. Especially it should have a room of memories where one could review the lives of men who have made our Association the organization which it is today, and used as a stimulus to those of us who are here today and to those who will follow us tomorrow.

Guitar Building.

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## SOME MEDICAL SIDE LIGHTS

ADDRESS OF THE PRESIDENT-ELECT

B. W. HAYS, M.D.

JACKSON, MO.

The greatest contribution to the progress of mankind has come from the field of medicine. These precious gifts to the people have come in the form of vaccination, immunization, antiseptic surgery, the science of bacteriology, sanitation and the art of therapeutics. The achievements of the last fifty years have given greater emphasis to progress than any similar period of medical history.

For devoted service, for the highest expression of generosity and good will, the physician occupies a place quite incomparable. The story told by Ian McLaren in the "Bonnie Briar Bush" of old Dr. McLoed is not exaggerated or overdrawn. It is a tale that may be duplicated in almost any community. One must believe, concerning men of this type, that they are motivated by the highest impulses and that their ministry is associated with that of the Master who never turned away from those who were bruised or broken in body.

The claim is made that medical science has reduced mortality about 1 per cent a year for the last forty years. As a result 600,000 more persons are alive today than there would have been had not sanitation and disease preventive measures been instituted.

During the middle of the nineteenth century scourges of cholera and yellow fever were frequent in the cities and towns around the coast of the Gulf of Mexico and along the Mississippi River basin, from New Orleans to St. Louis in the case of cholera epidemics and as far north as Cairo, Illinois, during the yellow fever visitations. It is needless to say that the death toll from these visitations was something appalling. In conquering these scourges the medical profession achieved one of its most brilliant victories. The story of the bravery and undaunted efforts of General Gorgas of the Army Medical Corps and Drs. Carroll, Reed, Lazear and Agramonte furnishes one of the most brilliant chapters in medical history.

When I began my undergraduate study of medi-

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Read at the 81st Annual Meeting of the Missouri State Medical Association, Jefferson City, May 2-4, 1938.



cine the nineteenth century was nearing its close. The future to me was largely a matter of daydreams and air castles; but looking backward on the achievements of the century there was much to inspire the student of medicine. The foundation for antiseptic surgery had been definitely established by Lister. Reasons for the necessity of asepsis and antisepsis in surgery were easily furnished by the discoveries of Pasteur, whose work laid the foundation for bacteriology and led to an explanation of the etiology of many of the acute infections of that day. Based on the work of Pasteur, Behring and Roux succeeded in developing a diphtheria antitoxin which was capable of reducing the mortality of diphtheria from about 40 per cent to 8 or 10 per cent. With present day refinements in the manufacture of diphtheria antitoxin and its use at the proper time and in proper quantity, the death rate from diphtheria has become almost negligible.

My first experience in the use of diphtheria antitoxin came in the year 1895. There were three cases of the disease in the same family, one, the laryngeal type and the harsh noisy breathing could be heard outside the building. A much older and more experienced physician was called in consultation, who, after carefully examining the children, expressed the opinion that the usual methods of treatment held little promise of doing any good and that the laryngeal case would probably die no matter what was done. It so happened that a local druggist had been induced to procure a few packages of diphtheria antitoxin on the basis of reports on its use abroad and in some of our eastern hospitals, all of which seemed most encouraging. I requested my consultant to bring some of the "new remedy" for diphtheria with him, which he did. There was no quibbling over the propriety of using it. Each child was given the prescribed dosage without any thought of such a thing as anaphylactic shock or serum sickness for we knew little about such reactions then. To our amazement all three promptly recovered. They were the first to receive antitoxin in Cape Girardeau County.

Another achievement of the middle nineteenth century of great importance was the discovery of ether anesthesia. This has enabled the surgeon to invade every region of the human anatomy without pain. Today it is of little importance to whom the honor of its discovery properly belongs, whether to Morton of Massachusetts or to Long of Georgia. Benjamin Brodie, you will recall, was announcing that men would never find a satisfactory agent for surgical anesthesia at the very moment that the ship with the news of ether was on the way to England. In similar vein, Samuel D. Gross announced that surgery had reached the limit of its possibilities and he had never removed an appendix. Today many new anesthetics or combinations of anesthetics have been developed to meet the varying demands of surgery. Local anesthesia, including spinal anesthesia, has given the surgeon a free hand in doing many types of surgery in which

a general anesthetic might be attended with certain undesirable results.

We find the doctor of today wonderfully blessed in the number and variety of agencies with which to combat disease and dysfunction. Insulin, unknown until quite recently, has wrought a marvelous change in the management of diabetes. In the old days the diabetic wards of our hospitals reeked with the odor of gangrene and amputations were frequent. By the use of insulin many thousands of diabetics have been made comfortable and their lives prolonged to, or quite near, their full life expectancy. Antityphoid vaccine, discovered in 1896, and its compulsory use for all enlistments in the World War reduced morbidity from typhoid fever to a marvelous degree. Liver extract and certain derivatives from the gastric mucosa of the pig have combined to give us an effective agent in the management of pernicious anemia. Pneumococcus serum offers great promise in the pneumonias caused by types I and II of the pneumococcus. It is sincerely to be hoped the other thirty odd types of the organism may furnish serums equally effective.

Here let us digress to speak of the Association as such. While it is growing old in point of time and service, with age has come increased vitality and enlargement of service. During the last year the work of the Council has been of an outstanding character and the volume of work greatly enhanced because of the detailed preparation of the agenda, thus enabling the Council to dispose of a large volume of business within the time allotted to a meeting.

The work of the committees has been most comprehensive and thorough as shown by their published reports. The scientific programs are being furnished by men of exceptional ability with the result that when these papers are published in *THE JOURNAL* it will become the repository of the latest and best thought in up-to-date medicine. Programs which satisfy the demands of scientific advance without going over the heads of the average member should be our objective. The ultra scientific, theoretical or highly controversial paper cannot serve the more practical needs of the general physician. Such papers are better suited for institutions for research in the field of pure science. The solved problems emanating from these places become the working tools of the general physician after having been tested from every conceivable angle.

There are some of our members who feel that our scientific programs should be arranged to constitute a postgraduate course in the various fields of study. They think that out of this arrangement interest would grow by leaps and bounds. Whether it would or not, I am not prepared to say. Some such step might be tentatively tried to see how it is received.

There has been no time in the past history of our Association when there was greater need for loyalty

and devotion to its principles and aims than at the present time. Today state medicine, certain insurance plans, bizarre schemes of politicians, would-be philanthropists and cultism are constantly bobbing up to menace the purposes of organized medicine. It behooves every eligible physician in the state to join his local county society and become a militant unit in the battles of organized medicine. Eternal vigilance and preparedness for action constitute our best defense against usurpation of undisturbed freedom of action which in the past has enabled the medical profession to contribute so much to world progress. We cannot allow ourselves to become conscripts of the government to please the whims of designing politicians whose chief bid is for popular acclaim instead of racial relief. It is not necessary now, and it has never been necessary in the past, to place the doctors of this country under the compulsive threat of fine and imprisonment in order that the indigent may have adequate medical care. Heretofore the medical profession has taken care of the medical needs of the indigent without compulsion save that which comes of an innate sense of duty and a generous desire to be helpful to all who are the victims of misfortune. It seems to me that medical men have the spirit of generosity in a more responsive degree than any other body of men. It is no uncommon thing to see a physician work over a desperately ill patient all night long without the prospect of receiving a penny for his services. In the face of all this there are some people who still believe that doctors are hard-hearted and devoid of sympathy.

If the following ambitions are realized by the medical profession the life span will be greatly increased: First, the further control and mastery of the infectious diseases; second, the understanding of the factors that produce diseases of the heart and blood vessels, the so-called degenerative diseases; third, a more perfect understanding of the factors involved in endocrine dysfunction, and fourth, the solution of the mystery of cancer and its cure; and to this may be added the control and cure of the venereal disease menace.

It is not an unfounded hope that makes us believe that these conquests shall be realized some day. By the actual progress of investigations in physics, biochemistry, physiology and biology now under way, the problems of these outstanding menaces to mankind are already partly solved. Their further solution depends upon the continuance of scientific work together with public education so that the layman of the future will have as much knowledge regarding general medicine and hygiene as the practicing physician of today.

The only safe prediction is that there is no limit to the accomplishments possible. Our task today is to achieve perspective for we are told, "The young have aspirations that never come to pass, and the old have recollections of things that never happened."

## ADDRESS OF WELCOME

GOVERNOR LLOYD C. STARK

JEFFERSON CITY, MO.

Mr. Chairman and Members of the Missouri State Medical Association:

Thank you for your gracious introduction. It is a pleasure to meet with you and to be able to tell you something about a program in which I am sure you are interested, not only as good physicians but as good citizens, for I think it should be a matter of pride to every Missourian that his state government is taking aggressive steps to safeguard the health of our indigent citizens.

In the last year and a half I have seen the whole public health picture in Missouri take on a new perspective. Where once only the more populous areas were served by the State Board of Health, outside of the supervisory functions which pertain to the entire state, the program has been broadened to the point where every county in the state is provided with a certain degree of public health service.

This program, of course, is developing gradually. That is as it should be. It is a job of education, not coercion. The Health Department does not want to force public health in Missouri homes and schools. It does seek to create a desire for good health and an understanding of the social evils which are attributable in part to physical ill health.

Perhaps some of you are concerned over what has become known as "socialized medicine." Let me assure you that the program of the State Board of Health does not run counter in any respect to the long established principles governing the private practice of medicine. In fact, it depends upon practicing physicians for its effectiveness. It aims at prevention rather than cure and stresses the need for all citizens to guard against illness by seeing their family physicians at regular intervals and by consulting them when the first symptoms appear.

I would like to illustrate this relationship. Our able Health Commissioner, Dr. Harry F. Parker, tells me that approximately 900 cases of acute, communicable syphilis are receiving regular weekly treatment at venereal disease clinics set up in about ten Missouri counties. This is the beginning of a state wide program.

But the point I want to make is this: The Health Department cares for indigent cases only. No patient receives clinical treatment unless he has been referred by a practicing physician and brings with him a signed statement from the physician declaring his inability to pay. Consequently you can see that without the cooperation of the local doctors this important program could not function. I was happy to learn that in these ten counties observation has disclosed that an increasing number of paying patients are receiving regular care from their own physicians.

Read at the 81st Annual Meeting of the Missouri State Medical Association, Jefferson City, May 2-4, 1938.



While the curtain of hypocrisy behind which the grim plague of syphilis took its deadly toll has been ripped apart and the war on the dread disease brought into the open, it is to the family physician that we must look to win the battle in the end. Our state and federal agencies can do effective work in the educational field but it remains for the private physician to write "finis" to a sorry chapter in the history of humanity.

Of course when a person suffering with syphilis is endangering others he becomes a public health menace and, if he is unable to pay a physician, it is the State Health Department's duty to treat him as quickly and regularly as possible. The necessary drugs are furnished free for these indigent cases, provided they have not had the disease more than two years.

A limited amount of money is available for this work and we are trying to make the best possible use of it by caring only for those persons who are in the acute, infectious stages. The program will be expanded to care for all indigent cases as soon as funds are available.

I have dwelt at some length on the program for the control and, let us hope, eradication of syphilis because just now it is a prime objective of the great medical fraternity of which you are outstanding and progressive members. I think you will win this battle just as you did those memorable fights against smallpox and yellow fever and tuberculosis.

One other great cause in which you stand shoulder and shoulder with the state and federal governments I have not mentioned. That is the campaign against cancer. But before I discuss what the state is doing in this field I would like to digress for a moment and consider the relationship between public health and public assistance.

You are aware that we are endeavoring in Missouri to launch a unified program for aiding those in need. This program is to a great extent correlated to the federal social security program and governed by it. As in the federal program we have sent into the field a trained personnel of social service workers.

For the first time in the history of the state these workers are compiling records which show in terms of mass population the effect of low living standards on the general health of our needy citizens. Not only are we gathering this information, we are acting upon it. Our workers proceed by first making a budget of the amount needed to keep a family on the level of decency and health. If the family has some small income, a sum is allotted to bring that income up to a higher level. Seldom is it as much as we would like it to be; but you will be interested in knowing that an allowance for medicine is figured into the budget whenever there is illness in the family.

No doubt many of you have been called upon to give some of your time in prescribing for some of these cases and I am sure you have generously

responded. How many persons who are today dependent upon the state for support eventually may become self supporting again I do not venture to say. But I will say that they are being taught to regard the physician as their friend and as the protector of community health.

I think it is a wholly commendable thing that the American Medical Association is sponsoring surveys of medical need among the indigent to determine for itself the quality and distribution of medical services to the people of the United States. I understand that state, county and local associations are being called upon to assemble the data with a view to cooperating with state and county health officials.

Missouri has received national recognition for its attention to the cancer problem and to the Cancer Committee of the Missouri State Medical Association goes a lion's share of the credit, not forgetting the splendid service rendered by the Women's Field Army, directed by Mrs. David S. Long, Harrisonville, in arousing an enlightened public to the needless ravages of the disease. As Dr. Ellis Fischel, chairman of your Committee and Missouri representative of the American Society for the Control of Cancer, has said, "Without full cooperation from the medical profession, all efforts toward effective cancer control must fail." I know you are giving that cooperation once again to uphold the fine reputation of your profession for disinterested public service.

I was pleased to read Dr. Fischel's comment on the part the State Board of Health is playing in this campaign. He said, "This Department has never failed to provide requested services for which it is peculiarly fitted and promises to be of even greater usefulness in the future."

There have been recommendations that the State Board of Health participate both actively and officially in the cancer control program and I am informed that the United States Public Health Service will recommend to all states that their legislatures make appropriations for cancer divisions in the health departments.

Indigent cases now are being treated at the state hospitals located at Fulton and St. Joseph. We can well be proud of the State Cancer Hospital being erected near Columbia for which the legislature appropriated \$500,000 to pay for the building and equipment and another \$100,000 to meet the first year's operating expenses. That hospital will stand as a testimonial to the high respect in which the people of Missouri hold the medical profession—a monument, but a highly useful one.

To envision the actual benefits of the public health program in Missouri today we would have to project ourselves several years into the future. It affects all of us but it affects still more vitally the children of tomorrow. Our program is subject to a certain limitation of funds but is sharing in the ever widening scope of the federal government's public health activities.

Under the Social Security Act we are enabled to share in funds set aside for maternal and child welfare, as well as those intended for local public health work. The State Board is instructed by the federal government to use these funds particularly in rural areas, in parts of the state suffering from severe economic distress and among groups in special need. These are, for the most part, people who are outside the reach of established health services.

The District Health Units which Dr. Parker has organized are an aftermath of the flood which caused so much suffering in Southeastern Missouri last spring. As an emergency measure, four district health units comprising the ten flood stricken counties were set up at that time. They were provided with the necessary personnel, health officers, sanitary engineers and nurses.

When the emergency had subsided a plan was devised to establish health districts all over the state, each comprising a variable number of counties according to public health needs and economic status. Today eight district health units are functioning and, within the next few months, the final two units will be put into operation to make the program encompass the entire state.

Prior to the start of this program all available funds had been used to help finance a few county health units and county nursing services. What about the rest of rural Missouri? The answer seemed to lie in the district health unit plan and it is proving the correct solution.

Whether or not the district unit plan remains as a permanent fixture, every effort will be made to promote and aid in the establishment of more county units and nursing services. The district set-up will serve as a framework for the coordination of county units, each to be devised to meet local needs. Such county units, cooperatively supported by local county governments, schools and other agencies with the State Department contributing and supervising the work, would represent a long step forward in our effort to reach the indigent citizen who cannot avail himself of the medical attention which he needs.

May I leave you with the wish that much good will come of this gathering, of the interchange of ideas and the fellowship you find together? I am sure that your Association is a bulwark for the high standards which are the heritage of your profession—the unselfish creed of the Oath of Hippocrates.

Sometimes I think that every profession, including that of public servant, needs some such standard of personal conduct as is embodied in the Oath written by the "Father of Medicine." For the fate of our democratic form of government is bound up in the integrity of those who administer it. The political corruptionist who conceals his vicious intent under a mask of benevolence is a deadlier foe than the Fascist or Communist who sows his seeds of propaganda in vain on American soil.

Since the beginning of our republic no group has done more to build and strengthen our great democratic American form of government than the members of the medical profession. In Missouri the physicians have ever been leaders in the cause of good government, clean, honest elections and all activities for the preservation of our institutions and the integrity of our courts.

Today Missouri stands at the crossroads. Shall the sanctity of our courts, of your state Supreme Court, be maintained? Or shall we turn it over to the political spoilsman and thus sell the precious liberties handed down to us by our forefathers who so courageously laid down their lives that we might be free?

I urge you as patriots and leaders in your respective communities, I urge you to go home to your people and let them know what boss control of the Missouri State Supreme Court will mean. Tell them to go to the polls in the August primary and do their duty for it is at the primary in August that the horse is stolen and not in November.

I thank you.

Capitol Building.

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## CARCINOMA OF THE COLON AND RECTUM

SURGICAL DISCUSSION

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In a discussion of carcinoma of the large bowel and rectum and its surgical treatment it is necessary to recall certain pioneer surgeons who have added to the sum of the present knowledge. There are many whom I shall not mention. There are a few who recently have added materially to the advancement of surgery in this field. Among these is Kraske who was the first to treat carcinoma of the rectum surgically by the perineal route and who designed the operation that bears his name. This operation, with some modifications, is in use today although it is usually one step in a resection that begins in the abdomen. C. W. Mayo, although not the first, has persistently taught the value of using the "white line" in anatomical dissection. This is a white line formed by the fusion of the reflection of the lateral peritoneal sheath of the mesentery and the parietal peritoneum. It is completely avascular and long segments of bowel can be easily and quickly mobilized with little dissection and the large blood vessels visualized and clamped before cutting. It was Miles who first advocated the combined abdomino-perineal approach to carcinoma of the rectum and rectosigmoid. The exteriorization operation of Mikulicz lends itself

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admirably to carcinoma in many parts of the bowel and carries with it a low mortality. And, there is the clamp devised and perfected by Rankin which is such an aid in several types of anastomosis, producing a close approximation of the two bowels and the sealing of the two lumens and allowing an aseptic procedure.

#### ANATOMY AND PATHOLOGY

The mode of transmission of metastasis from carcinomatous growths in the bowel is by the blood to the liver and by the lymph channels to the regional lymph glands. The blood vessels are visible to the naked eye of the operating surgeon and form good landmarks in visualizing the gland bearing area with its lymphatic drainage of any tumor in any segment of bowel. Enlarged lymph glands may also indicate the spread of growth away from its original focus. An analysis of the blood channels to and from the large bowel shows that there is an anatomical difference of these channels between the ascending colon and the transverse, and the descending and sigmoid colons respectively. The ascending colon is supplied by blood from the branches of the middle colic artery, the right colic artery and the ileocolic artery. Furthermore, it will be seen that while these vessels form many arterial arcades with anastomosis in the mesocolon they take origin from a comparatively short trunk, the superior mesenteric artery. Lymphatics drain-

ing away from this portion of the bowel are intercepted by only a comparatively few glands before they empty into the larger trunks. For this reason, the gland bearing area of the right half of the colon can be removed only by sacrificing the blood supply to a large segment of the ascending colon, sometimes the cecum, and occasionally a part of the transverse colon. Likewise, carcinoma in the cecum, with glandular metastasis, will require the removal of the cecum and a portion of the terminal ileum.

The transverse colon is supplied by one long arterial arcade from the middle colic artery anastomosing with the right and left colic arteries respectively. Metastasis from malignancy in this part of the bowel will pass through the interception of many glands, in close approximation to the bowel, before the major channels are reached. Resection of a malignant growth in this part of the bowel requires removal of only a small amount of good bowel on the distal and proximal sides, together with the mesentery, to insure the removal of the tumor and its gland bearing area.

The descending colon and sigmoid contain an anatomical combination of the two modes of blood supply so that while the descending colon is supplied by long arcades from a single stem, the left colic, the sigmoid is supplied by three or four short main vessels with few anastomosing branches accompanied by veins and lymphatics that drain in the opposite direction almost immediately into large major trunks without the interception of many glands. A large portion of the descending colon with its gland bearing area may be safely removed without endangering the arterial supply to the sigmoid. The problem is different with the rectosigmoid; the gland bearing area is relatively small but large vessels will be sacrificed, affecting the vitality of the sigmoid. Complete removal of the rectum and rectosigmoid, except in a few early cases, will fulfill the above conditions.

The direction of metastatic dissemination from carcinoma of the rectum is in three directions, as has been so ably shown and demonstrated by Miles; upward along the superior hemorrhoidal and inferior mesentery vessels in the mesentery; downward in the ischiorectal fat, the perineal skin and the external sphincter; and, laterally to the levator ani muscles and the pelvic fascia. To insure immunity against recurrence from a carcinoma of the rectum all these structures must be dealt with accordingly.

The surgical pathology of carcinoma of the large bowel and rectum may be summed up quite briefly for all clinical purposes. Any malignant tumor affecting the colon or rectum is the direct result of two processes; i. e., neoplastic from the primary carcinomatous growth, and inflammatory secondary to the ulceration and infection from the fecal stream. There is no clinical method of determining which part of the tumor is the result of inflammation and therefore benign, and which part is neo-

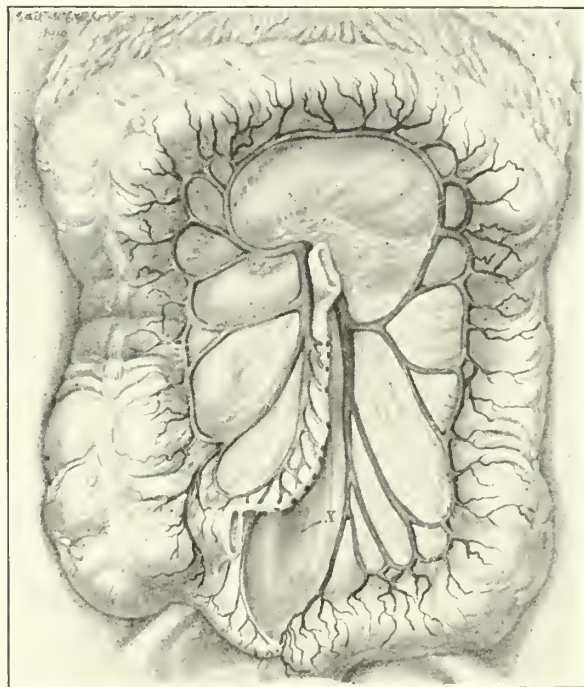


Fig. 1. Illustrating the arterial supply of the colon which is a good index to the gland bearing area of different segments of the bowel. Lymphatic spread of a carcinoma in the transverse colon passes through the interception of many glands close to the bowel and, therefore, its gland bearing area is small and local when compared to that in the ascending and descending colons and the sigmoid which is more extensive and diffuse.

plastic and malignant. This also holds true in the case of enlarged glands in the adjacent mesentery and along the blood and lymph channels. Some apparently inoperable growths will become easily resectable masses as the inflammation subsides following a short-circuiting operation or a colostomy to divert the fecal flow away from the affected bowel.

The use of roentgen ray therapy or radium following this type of procedure has been shown to produce a shrinking in the size of the mass. The presence of metastasis in the liver immediately seals the fate of the patient. It must be noted here that there are a few isolated cases on record of carcinoma of the bowel with a single small metastatic nodule in the liver, in which the patient survived for a long and useful span of years following resection of the original tumor focus. It has been said the primary growth seems to have a carcinogenic influence on the metastatic growth.

#### PREOPERATIVE AND POSTOPERATIVE TREATMENT

The three most predominant complications of carcinoma of the bowel are chronic intestinal obstruction, secondary anemia and depletion of the fluid reserves of the body. Many postoperative complications are the direct result of one or more of these three. Secondary anemia frequently accompanies carcinoma of the cecum while intestinal obstruction is rare. The more distal from the cecum the tumor occurs the more will chronic obstruction dominate the clinical picture. Constipation and diarrhea are always present in obstruction of this kind and there is a resultant depletion of the body fluids. The preoperative treatment of carcinoma of the ascending, transverse and descending colons and the rectum is primarily to overcome this chronic obstruction. This may be accomplished by surgical or preferably medical means. Without adequate preoperative decompression of the bowel paralytic ileus is most apt to follow. Approximately from five to seven days will be required to prepare the patient properly. The secondary anemia incident to carcinoma of the cecum is effectively handled by the administration of iron and the use of blood transfusions.

A daily regimen is immediately instituted as follows: Each morning the patient receives 8 ounces of water in which has been dissolved 1 ounce of magnesium sulphate. The solution is placed in an ordinary water pitcher beside the patient's bed with an ounce measuring glass and instructions are given to drink one glassful every half hour until all has been consumed. If this is begun at 8 o'clock the last dose will be taken at noon. A small dish of candy fruit drops will be useful in relieving any bad taste that the patient may have. Grape juice or glucose may be added to the solution for the same purpose. Catharsis administered in this manner will produce one large copious bowel movement each day without griping and without the danger of increasing the already present partial obstruction. The patient is placed on a high vitamin, high caloric, nonresidue diet. As these patients are frequently in the upper age brackets and are poorly nourished and somewhat emaciated, a solution of 1000 cc. of 10 per cent glucose is given intravenously each day. This replenishes fluids lost through the process of decompressing the bowel, stimulates the kidneys and stores much needed glycogen in the liver, heart and skeletal muscles. A daily soap suds enema is given to completely empty the colon distal to the obstructing growth and, in the case of a tumor in the sigmoid or rectum, to aid in removing any fecal impaction which so commonly forms on the proximal side of the growth and produces diarrhea and occasionally interferes with surgical removal. If possible, the patient is urged to be out of bed daily and is allowed to use the toilet in place of the bed pan. Frequently these people will run a lowered rate of metabolism and thyroid extract can be administered for this and, curiously enough, it will be found to stimulate the appetite.

These few preoperative days may be used advantageously to treat dental sepsis, foci of infections, cardiac malfunctions, to secure blood donors and many small preparations that will frequently insure surgical success.

On the day before the operation, previous treatment is discontinued and the patient is given one ampule of pitressin, three times, to promote intes-

Table 1. *Daily Regimen*

Preoperative Treatment for Obstruction, Anemia, Lost Fluids	Last Preoperative Day	1st to 3rd Postoperative Day	Postoperative
MgSO <sub>4</sub>	Transfusion	Morphine	Diet
Diet	Pitressin	Transfusion	CO <sub>2</sub> + O <sub>2</sub>
Enemata	Vaccine	Fluids	Roentgen ray
Glucose intravenously			Care of colostomy
Thyroid extract			Wangensteen
Dental care			
Transfusion			

Scheme of preoperative care in case of carcinoma of the colon and rectum aimed at decompression of the chronically obstructed bowel and building up the depleted tissues of the body. The postoperative care depends on the magnitude of the surgical procedure.



tinal tonus and aid in the complete evacuation of the intestine. An empty constricted bowel is much more adaptable to surgical intervention than a dilated, soggy, paralyzed one. This period is an excellent time to administer a blood transfusion and many surgeons use this day for intraperitoneal vaccination with one of the several vaccines. This type of preoperative preparation will place the patient in the best possible condition for the most radical of procedures.

Should only a colostomy be done, with the idea of a second stage later, nothing has been lost and the patient will remain comfortable for from five to six days after operation without abdominal discomfort or distention. The colostomy will heal before it will be necessary to open it and, in case a midabdominal incision has been made for exploration, there will be no fecal contamination to infect the suture line. In the presence of moderately well advanced obstruction with vomiting, a Wangenstein suction can be used advantageously to relieve abdominal distention and decompress the bowel, allowing several days to recondition the patient before surgery is attempted.

In those cases in which the obstruction is far advanced, surgical measures will be necessary to relieve the patient and permit decompression. Colostomy is the most common method of procedure. Cecostomy and appendicostomy are two methods of considerable merit, especially where the tumor is in the right half of the colon, but when the obstructing tumor is in the rectosigmoid or rectum, cecostomy and appendicostomy will not empty the colon satisfactorily.

Postoperative care depends on the magnitude of the surgical procedure and the condition of the patient. Where exploration and colostomy have been done, either because of inoperability or to await more favorable circumstances for resection, the postoperative care is obvious. The first consideration is the comfort of the patient and the prevention of shock. It has been my experience that this is best handled by regularly repeated doses of morphine, as 1/6 grain every four hours. A non-residue diet will permit the colostomy to go undisturbed for from five to seven days and allows time for healing and removal of the skin sutures before the abdominal wall becomes contaminated with fecal discharge. This is a distinct advantage in a case where the tumor is exteriorized according to the Mikulicz procedure. Immediate resection of the carcinoma, with an ileocolostomy or an end to end union in the transverse colon or sigmoid, will require postoperative care. Diet is withheld until the third day and fluids are supplied by intravenous and hypodermoclysis administration, the minimum being 3000 cc. a day. The use of the Wangenstein suction protects the anastomosis by preventing any accumulation of fluids in the bowel or stomach which may easily occur when the patient first begins to take fluids by mouth. Nurses and attendants must be cautioned to give only small enemas

at first. A blood transfusion is frequently indicated following resection of carcinoma of the rectum or in difficult procedure on other parts of the bowel, and this should be given as soon as possible following the operation before any signs of postoperative shock manifest themselves. Frequently, these patients are elderly and they will require scrupulous postoperative care. Inhalations of CO<sub>2</sub> and O<sub>2</sub>, three times daily, is an excellent adjunct to prevent pulmonary complications where chronic bronchitis or bronchiectasis is present. Postoperative distention, if it should occur, is best treated with large warm abdominal stipes, a rectal tube and a Wangenstein suction tube. One must suspect peritonitis with this development. Occasionally a suppurative parotitis complicates intestinal surgery and this condition is sometimes aborted by an early therapeutic dose of roentgen ray or radium directly over the involved gland.

An excellent surgical dressing to use where a colostomy is open can be prepared by mixing equal parts of common rubber cement and ether and painting this over the abdomen and incision in layers to form a thin coating of rubber. This prevents infection around sutures and bowel and protects the skin from excoriation and digestion from substances in the fecal stream. The after-care of a permanent colostomy should be simplified as much as possible by using a small piece of gauze placed over the opening and held in place by an elastic band running around the body, a plain enema through the colostomy every morning and regulating the consistency of the bowel movement by eliminating any diarrhea producing foods from the diet. A colostomy bag is frequently not necessary.

#### OPERATIONS

Any person with a carcinoma of the large bowel or rectum is entitled to a laparotomy. The more this becomes recognized the more often we will find that a clinically inoperable case may occasionally be an operable case. Laparotomy also affords an opportunity for surgical decompression of the bowel as complete obstruction is almost certain to occur whether it be a simple colostomy, cecostomy, ileocolostomy, ileosigmoidostomy or any other type of short-circuiting operation. It is universally recognized that the graded type of intestinal resection carries the lowest mortality. One must not lose sight of the fact that the one stage operation can be used advantageously in many cases.

The simplest type of resection that can be used for the removal of carcinoma of the colon is the Mikulicz type of exteriorization, a simple type of procedure usually requiring a few minutes to complete. It is performed by merely delivering the bowel and tumor through the incision and closing the abdominal wall around the mass. There is no danger of peritonitis and the mass may be removed with the electric cautery in from forty-eight to seventy-two hours. Some prefer to remove the mass immediately following closure of the abdo-

men. At the end of seventy-two hours a small catheter may be inserted into the proximal bowel to allow the passage of gas should the abdomen become distended. Considerable care should be exercised in the operation to accurately approximate the two "barrels" of the colon so that a good anatomical septum is constructed that subsequently may be easily broken down and the accidental "wandering" of a loop of bowel between the two lumens be prevented.

An immediate resection of the tumor with an end to end anastomosis requires very little more work and time, gives an excellent result and nullifies the necessity of a second operation. A Rankin or similar type of intestinal crushing clamp can be used to considerable advantage in this operation. This operation is limited to the transverse, descending and sigmoid colon for reasons outlined above. In these portions of the colon the enlarged glands will usually be found close to the bowel and can be removed and the blood supply allows an end to end, or a side to side or an end to side, anastomosis with considerable safety. The end to end anastomosis is the most popular at the present time.

The cecum and ascending colon do not lend themselves to this type of resection with an immediate anastomosis. The removal of a tumor in this part, with the gland bearing area, seriously impairs the blood supply to the remaining bowel and makes an end to end anastomosis a precarious proceeding. In the right half of the colon, an ileocolostomy is the first step to be undertaken and exploration of the tumor and the liver at this time, of course, is taken for granted. An ileocolostomy will change the fecal current from the area of the carcinoma with its ulcerating surface and subsequent infection and will establish a functioning anastomosis before the full content of the fecal stream becomes dependent upon it. The ileum may be severed just distal to the point of anastomosis, or this may be done at the second stage. There is this to be said about the two stage operation: Besides shortening the operating time and avoiding shock to the patient, should the anastomosis fail, the patient is not doomed and, should any spill of the bowel contents occur, the abdominal cavity will automatically become immunized against infection at the time of the second operation. The removal of the cecum and ascending colon offers few technical difficulties. The bowel is easily mobilized, the anastomosis is established and one has only to identify and protect the kidney and duodenum. The blind end of the colon is inverted in the accepted manner. It is important not to leave behind a long free end of blind ileum at the anastomosis as this will occasionally develop into a blind pouch and produce abdominal symptoms. Because of this possibility some prefer the end to side anastomosis at this point.

In carcinoma of the rectosigmoid and rectum the lymphatic dissemination is in three directions as has been pointed out, and to insure removal of the

tumor and its gland bearing area the mesentery, levators and the anus must be sacrificed and the patient should be prepared in anticipation of this operation; then, any modification may be decided upon when the surgeon opens the abdomen. When the abdomen is opened, the liver is immediately examined for the presence of metastasis and then the tumor is examined to determine its operability. If the mass is easily and technically accessible, a one stage abdomino-perineal resection is immediately begun. The location of the tumor may change the plan of surgical attack as the tumor is visualized, or the condition of the patient may hasten the surgeon to terminate this procedure only to complete it at a second operation. The similarity of the many procedures in use in this part of the body, for all practical purposes, allows the surgeon to stop at almost any stage of the removal of the rectosigmoid or rectum and send the patient back to the ward. The simplest procedure to be done, of course, is a simple colostomy, in the face of visceral metastasis. Where the carcinoma is large and adherent, with considerable inflammation, the Lahey two stage method is of great value. Short-circuiting of the fecal stream and subsequent irrigation of the affected bowel will cause considerable reduction in the size of the tumor and later the tumor will become resectable. The removal may be carried a further step, i. e., the rectum and tumor mobilized and placed beneath the pelvic peritoneum after Coffey's method. At a later date, the rectum and anus are removed from below. Occasionally, one encounters a tumor that is resectable from above with immediate end to end anastomosis, giving the patient a normal anus. It must be remembered that this will not allow the removal of all of the gland bearing area. With this method of surgical attack in mind, any situation may be adequately handled and many more of the one stage procedures will be performed. In the hands of a competent surgeon, the one stage abdomino-perineal resection is easy and quick. It must be recognized that there is a certain mortality incident to the opening of the abdomen a second time.

#### SUMMARY

The treatment of carcinoma of the large bowel and rectum is surgical removal. Practically all these tumors have been shown to be resistant to the accepted methods of roentgen ray and radium therapy. The only hope for these people is early removal and until more and more of us become more and more carcinoma minded, the surgeon will be confronted with cases of what are apparently inoperable tumors of the bowel and rectum. Also always there is present the ever impending bowel obstruction and, because these tumor masses are the result of the body reaction to malignancy and to infection, it is frequently difficult to determine the operability of these cases without a laparotomy. It is becoming known to surgeons experienced in this type of work that by using graded operations



some of the cases can be saved. Metastasis to the liver, of course, spells its own doom. On the other hand, enlarged glands may be inflammatory in character and the extent of the tumor may limit operability; but this can frequently be overcome by operating to direct the fecal current away from the malignant growth until the inflammatory portion subsides and the carcinoma may be then removed. Where the carcinoma is immediately resectable, the operator has the choice of several well defined and acceptable methods of operating. It is important to remember that the gland bearing area must also be removed to insure against possible recurrence. The gland bearing area varies anatomically in the right half and the left half of the colon. Under the usual run of circumstances the graded operations carry the lowest mortality.

The preoperative and postoperative care will usually decide the successful outcome for the patient. In the face of a chronic obstruction and without decompression a successful anastomosis of the bowel will be due more to luck than to any technical skill. Decompression may be accomplished by medical or surgical means; either way, it is the most important part of the preoperative care. The associated depletion of body fluids must be restored by intravenous methods and by the use of transfusions. Many of these patients are advanced in age and require skillful handling to prevent any serious complications in the heart, kidneys, lungs or abdomen. The margin of safety in the vital organs of these patients is small and must not be dissipated by subjecting them to injudicious strains. The care of a colostomy has been improved and simplified in recent years so that it should not be considered with the abhorrence it formerly caused.

#### CONCLUSION

1. The treatment of carcinoma of the colon and rectum is strictly surgical. Carcinoma in this part of the body is resistant to the influence of roentgen ray and radium.

2. With the proper use of medical and surgical decompression of a chronically obstructed bowel it is possible to operate on these patients under much more favorable circumstances than ever before.

3. The use of the laparotomy and the graded operation will salvage an occasional case from among the larger number of inoperable cases.

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The series of discoveries in venereal lymphogranuloma has developed in four steps. In 1913 the French scientists Durand, Nicolas and Favre proved that the so-called strumous bubo is a separate venereal disease and in the next year Müller-Meernach and Justi proved the same for the climatic bubo. The second step was when Wilhelm Frei, New York (*Journal A. M. A.*, May 14, 1938), found a specific cutaneous reaction, the so-called venereal lymphogranuloma skin test, 1925. With the help of this test the identity of venereal lymphogranuloma and of climatic bubo were proved and abortive and inapparent forms of the disease were brought to light.

## DIARRHEA IN YOUNG PEOPLE

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This discussion is intended to consider the non-specific group of diarrheas. Typhoid, paratyphoid, amebic dysentery, bacillary dysentery and celiac disease are excluded.

A classification of this group of symptoms according to anatomy and bacteriology has been unsatisfactory. The apparent relative causes, prevention and treatment are worthy of careful study. There are no regular pathological changes and a definite specific etiology is unknown.

This disease or rather group of symptoms is more prevalent in hot weather. It is found more often in bottle fed than in breast fed infants. Excessive amounts of foods or contaminated foods are supposed to cause a few cases. The undernourished are more susceptible.

Some dysfunction of gastric secretion seems to be a causative factor. It appears that excessive heat either externally or as fever may be instrumental in bringing this about. Research has shown a definite decrease in gastric secretions during diarrhea.

Gastric secretion with its pepsin, rennin and hydrochloric acid is proportionately less in infants and children than in adults. Hydrochloric acid, the supposed inhibitor of bacterial growth in the stomach, is especially weak in infants and children. It is believed that any change materially lessening the gastric secretion, particularly the hydrochloric acid, may permit food fermentation and putrefaction. What type of bacteria or virus enters into this process of fermentation and diarrhea is not known.

The principal food elements in milk as proteins, carbohydrates and fats have been considered. If given in reasonable amounts under normal conditions they do no harm. High fever due to an infection in some other part of the body is frequently accompanied by a decrease in gastric secretion. The danger of bacterial invasion in the gastro-intestinal tract increases as the inhibiting agent, hydrochloric acid, decreases.

Groups of bacteria found in rhinopharyngitis have also been demonstrated in the gastro-intestinal tract of the same individuals. A similar finding has been noted in patients suffering with otitis media.

A number of research men have demonstrated the presence of a group of bacteria, particularly the colon bacillus, in the upper digestive tract of diarrhea patients. These bacteria are found normally only in the colon.

Acute rhinopharyngitis in infants and children is sometimes accompanied with an extensive alkaline mucous exudate. This alkaline mucous exudate is frequently polluted with bacteria and swal-

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lowed into the stomach. This alkalinity is supposed in some instances to be sufficient to neutralize the weakened acidity of the gastric secretion.

Milk in the presence of putrefactive and fermentative bacteria in the absence of an inhibiting agent may set up the beginning of a diarrhea.

Suppose a change in weather with extreme heat, an ear, nose or throat infection with high temperature, swallowing of alkaline mucous heavily laden with bacteria, a material decrease in gastric secretion with deficient amount of pepsin, rennin and hydrochloric acid, an invasion of the upper digestive tract by bacteria from the colon. To this picture is needed only a feeding of ordinary milk as a culture to ignite the underlying symptomatology which is so hard to classify, prevent and treat and which for the want of a better designation we call diarrhea.

Various degrees of severity from the mild to the fatal cases occur. It is thought that this is a nutritional disturbance.

Because of excessive vomiting and diarrhea a starvation condition exists in some cases. This starvation may continue until liquids and chemicals are materially reduced making normal chemistry of the body impossible. A condition of acidosis, toxicosis, dehydration, anhydremia and athrepisia have been mentioned to characterize this group of symptoms.

Absorbed toxins may have a specific action on the central nervous system and the digestive tract. The symptoms of vomiting, fever, diarrhea and convulsions may appear. Our limited knowledge of gastro-intestinal allergy permits us to mention that without comment. At best, summer diarrhea is only theoretically explained. The apparently simple case may change by rapidly alarming symptoms to the one of startling apathetic appearance. There may be grayish skin, sunken half-open eyes, rapid pulse, pauseless air hunger respirations, coma and death in only a few days or even a few hours.

Summer diarrhea with its accompanying symptoms seems to be the result of a nutritional disturbance. Since it is found more often in the artificially fed than in those fed on mother's milk, it is fairly well agreed that prevention and cure depend in a great measure on the modification of cow's milk that it may comply as nearly as possible to that of mother's milk in the human.

It appears that a good number of opinions agree that unsweetened, evaporated milk with addition of Karo syrup and lactic acid or some other suitable equivalent meets this requirement reasonably well. In the above mentioned formula it is presumed that the curds of cow's milk will be reduced in size thus making digestion easier, that the lactic acid will aid digestion and assist the hydrochloric acid in inhibiting bacterial growth, that the syrup will fill the carbohydrate need. It is believed that the use of unsweetened evaporated milk has materially reduced the infant mortality in the last few years.

A great many clinicians advocate the withdrawal

of all milk feedings for a period of twelve or twenty-four hours in beginning the treatment of a case of diarrhea. The former textbook plan of treating diarrheas with purgatives seems to be losing ground.

It is the opinion of many physicians that restoring of lost liquids and chemicals along with suitable nourishment and rest should form the basis of treatment. Where vomiting or some other contraindication does not prevent, water given by mouth sufficient to supply the requirement of dehydration is advocated.

In severe cases it may become necessary to administer liquids in the form of normal saline, Wringer's solution or Hartman's solution in any manner possible. These may be given hypodermically, intravenously or intraperitoneally. Of these, Hartman's solution seems to be preferred by many. In emergencies glucose is added for nourishment.

The nutritional requirements of a child ill with diarrhea are divided into three periods. First, that of twelve to twenty-four hours in which all food is withdrawn except one of Hartman's solutions to supply liquids, alkalies and glucose. This may be given by mouth or otherwise. This period is followed by about two days of feeding with some form of protein milk such as skimmed lactic acid milk, buttermilk or casex. The third period consists in feeding of some suitable milk formula to fit the individual case. The introduction of liquids to care for dehydration together with alkalies is essential.

Corrective mixtures containing the so-called intestinal antiseptics with bismuth have been widely used. Some form of opium for pain probably is the most useful. Scraped raw apple, and raw bananas have been used by some of the large children's hospitals in this and in foreign countries in treating diarrhea.

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#### NOISE AND ITS EFFECT ON HUMAN BEINGS: NOISE CONTROL AS A BY-PRODUCT OF AIR CONDITIONING

In their dissertation on noise and its effect on human beings Carey P. McCord, Detroit; Edwin E. Teal, Ann Arbor, Mich., and William N. Witheridge, Detroit (Journal A. M. A., May 7, 1938), concluded by saying that the American Medical Association's Committee on Air Conditioning recognizes that proper air conditioning is one factor tending to diminish the ill effects of noise of some types. The procurement of closed windows, doors and other sound barriers commonly associated with artificial climates in public buildings, office buildings, department stores, theaters and so on may eliminate as much as 75 per cent of the noises of extraneous origin. In industry, air conditioning offers little promise of protection against noise for workers employed near the origin of noise. Vibration in ranges below audibility has a prominent role in the production of injuries arbitrarily classed as noise diseases. Although inaudible vibrations may involve occupied areas that many be air conditioned, obviously no protection can be secured from such vibrations by air conditioning. The compilation of material making up this report presents extensive evidence that genuine injury is widespread as a result of noise action and that noise deafness is the chief of these dysfunctions in terms of both frequency and severity.



## DIABETES MELLITUS WITH LIPEMIA RETINALIS

### REPORT OF A CASE

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Lipemia retinalis was first described by Heyl<sup>1</sup> in 1880. Parker and Culler<sup>2</sup> gave an excellent review of thirty-nine cases in 1930, including two of their own. Since then additional cases have been reported by Chase,<sup>3</sup> McKee and Rabinowitsch,<sup>4</sup> Jaffe and Schonfeld,<sup>5</sup> Lepard,<sup>6</sup> Joslin<sup>7</sup> (seven cases, of which two were reported in detail by Marble and Smith<sup>8</sup>), Allen and Howard<sup>9</sup> and Baker<sup>10</sup> (seven cases). Gray and Root<sup>11</sup> reviewed the cases which had been reported up to 1923 adding two of their own. This is the fifty-ninth case to be reported.

### REPORT OF CASE

The patient, a single white girl, aged 16 years, entered the Kansas City General Hospital at 1 p. m., April 25, 1937, appearing acutely ill and complaining of dryness and crusting of the mouth and tongue of three days' duration and abdominal discomfort and fatigue for one day.

Questioning revealed that a marked increase in appetite, thirst and urinary output had been present for about six weeks. During that time there had been occasional dizziness and blurring of vision. Three days before admission her mouth, tongue and lips became noticeably dry and crusted, increasing in severity. There was transient pain in both eyes. Profound fatigue and indefinite abdominal discomfort began on the evening before admission. On the day of entry she noted pain in both eyes on awakening, and this and the other symptoms persisting, she remained in bed and summoned a physician who recommended hospitalization.

**Past Medical History.**—The patient had typhoid fever, pneumonia and mumps during childhood. She had had occasional headaches for the last two years and nocturia one or two times every night for one year. On admission a menstrual period was two weeks overdue but otherwise her periods were regular and normal. She weighed 105 pounds three weeks before admission and thought that she had gained two or three pounds since.

**Family History.**—Negative for metabolic and hereditary diseases. Her father, mother, five brothers and five sisters are living and well.

**Examination.**—On admission the patient was noted to be a rather poorly developed girl for her age and height. The breasts were small and her legs long and thin. She was drowsy, at times quite restless, but able to answer questions. The rectal temperature was 97 degrees, the pulse 88 and respiration 24; the radial pulse was barely palpable and a reading of her blood pressure could not be obtained although she did not appear to be in shock. (This was probably due to increased viscosity of the blood.) The respirations were of the Kussmaul type and the skin was markedly dehydrated. The breath was foul and the buccal mucous membrane, tongue and lips were covered with a bloody dry crust. The pharynx and tonsils were red and a small amount of exudate was noted on the right side. No abnormalities could be detected on examining the heart, lungs and abdomen

aside from general resistance to deep palpation. Aside from the general attitude of the patient, there were no abnormal neurological findings. Later, her weight was determined to be 100 pounds and her height 65½ inches.

The lid margins and conjunctiva were congested and crustation was formed in the hair follicles. The pupils were slightly dilated, but equal and reacted to light and accommodation. The intra-ocular pressure was 12 Schiotz. The patient had great difficulty in controlling ocular movements due to her stuporous condition. The lens and media showed no pathologic changes. The fundus was a light pinkish color that might resemble half strawberry and half vanilla ice cream when mixed together. The arteries and veins were distended but not tortuous, they were approximately equal in size and the color of cream. The choroidal vessels were plainly seen. The nerve head was slightly greyish but distinctly outlined. The macula had a higher reddish color than the remainder of the fundus. There were no exudates or hemorrhages.

**Laboratory Findings.**—A catheterized urine specimen contained albumin, grade 3; sugar, 5 per cent; acetone and diacetic acid, grade 4. Blood sugar was 360 mgm., cholesterol content of the whole blood, 800 mgm. (Bloor's method) and the CO<sub>2</sub> combining power 11 volumes per 100 cc. Blood count was 5,930,000 red blood corpuscles and 35,950 white blood corpuscles. The appearance of the blood was milky making it impossible to determine the hemoglobin content because of the difference between its color and that of the standards. When the cells had settled, the plasma had the appearance of cream.

**Progress and Treatment.**—First Day: The patient received 290 units of insulin of which 100 units were given intravenously. Blood pressure was 115/90. The stomach was washed with soda water shortly after admission and a large quantity of foul, bloody material obtained. In spite of this, the patient vomited all fluids taken by mouth until noon of the second day. Twelve hours after admission the blood plasma contained sugar, 500 mgm. per 100 cc.; nonprotein nitrogen, 31 mgm. per 100 cc.; creatinine, 1.4 mgm. per 100 cc.; cholesterol, 1200, and cholesterol esters, 857 mgm. per 100 cc.; CO<sub>2</sub> combining power was 25 volumes per 100 cc. She was slightly more rational. There were no changes in the fundus.

Second Day: She received an additional 240 units of insulin. A total of 4500 cc. saline solution was given on each of the first two days, containing 160 G. glucose on the first day and 140 G. glucose on the second day. The urine was examined every two hours during the first two days. Diacetic acid disappeared from the urine early on the second day and acetone could not be detected after noon of the second day but about 5 per cent sugar persisted until late the second day. The blood sugar was 450 mgm. per 100 cc.; cholesterol 1091 and cholesterol esters 857 mgm. per 100 cc.; and the CO<sub>2</sub> combining power was 31 volumes per 100 cc. The patient was entirely rational by the second day and her admission complaints had disappeared. The visual fields were rechecked roughly and found to be normal and the condition of the mouth, tongue and pharynx was greatly improved.

Third Day: On April 28, the patient felt well, her mouth and throat appeared normal and the skin turgor was good. Urine was free of sugar, acetone bodies and albumin. Blood sugar was 118 mgm. per 100 cc.; cholesterol 533 and cholesterol esters 300 mgm. per 100 cc.; the CO<sub>2</sub> combining power 45 volumes per 100 cc. Blood count was 5750 white blood cells and 3,360,000 red cells, but it was still impossible to record the hemoglobin content. The intravenous infusion was discontinued and she was given a diet consisting of carbohydrates, 100 G.; protein, 60 G., and fat, 30 G. She received 20 units of insulin before each meal.

After the third day the diet consisted of carbohydrates, 130 G.; protein, 70 G., and fat, 50 G. It was found after a few days that the patient required 70 units of insulin daily, 40 units before breakfast, 10 units before lunch and 20 units before supper. This completely prevented glycosuria. Forty-five grains of reduced iron were given daily. The fundi were examined every day. Their appearance gradually improved and had returned to normal on the seventh hospital day, at which time the pressure was 15 Schoitz. The blood sugar three hours after breakfast ranged from 65 to 250 mgm. per 100 cc. and the cholesterol from 320 to 600 and the cholesterol esters from 159 to 300 mgm. per 100 cc. A roentgenogram of the chest showed calcified foci in the lung and peribronchial glands and slight proliferative changes in the right upper lobe. There was slight increase in the anteroposterior diameter of the sella turcica.

The patient was dismissed on the twelfth day. Her urine was consistently sugar free; the last value of her blood sugar was 77 mgm. per 100 cc., and cholesterol and cholesterol esters, 240 and 118 mgm. per 100 cc. respectively. The sedimentation rate of the red blood corpuscles was rapid. The hemoglobin was 11 G. per 100 cc. (71 per cent), red cells 3,760,000, white cells 7200 cells per cmm. The Mantoux test was negative. The eye grounds were normal, no hemorrhages or exudates and no changes in the vitreous, lens or anterior segments had developed. The pressure was 17 Schoitz. She was instructed to adhere to the following diet: Carbohydrates, 142 G.; proteins, 65 G., and fats, 95 G. She was also instructed to continue with her insulin as she had in the hospital; to examine her urine three or four times a day, and to report for examination regularly.

The patient reported several times for examination and was observed to be doing well. On June 13, she was readmitted for a thorough check-up. She stated on admission that she had followed her diet carefully and had taken her insulin regularly as prescribed. She had one or two mild insulin reactions. The urine had never shown the slightest trace of sugar. General physical examination gave entirely normal results; her weight was 108 pounds, a gain of 8 pounds; and her appearance was excellent. Urinalysis gave normal findings, blood sugar was 69 mgm. per 100 cc., the cholesterol and cholesterol esters were 292 and 133 mgm. per 100 cc. respectively. The hemoglobin content of the blood was 12.3 G. per 100 cc. (80 per cent) and 8350 white blood cells per cmm. A roentgenogram of the chest showed no change since the previous observation. The patient was instructed to continue exactly as she had and report to her family physician at home for treatment of her pulmonary lesion and for further care of her diabetes.

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## NEW TREATMENT FOR CHRONIC PROSTATITIS AND SEMINAL VESICULITIS

PAUL B. NUSSBAUM, M.D.

CAPE GIRARDEAU, MO.

Chronic prostatitis and seminal vesiculitis have been the bugbears of the medical profession for years, due not only to their recurrent and relapsing nature but sometimes to the difficulty in making a correct diagnosis. Not only are these conditions noted for their persistent character but it is now known that these conditions may exist within the human body giving no symptoms referable to the genito-urinary tract but masquerading as aches and pains in the joints and muscles, or simulating acute appendicitis, gallbladder colic, sciatica and numerous other conditions from which they must be differentiated; and many an innocent appendix has been sacrificed for this cause.

The scope of this paper will deal with the chronic prostatitis and vesiculitis of both venereal and non-venereal origin, but not of the tuberculous type or some of the rarer infections.

Due to the sexual character of these glands the patient attaches undue importance to the "morning drop," the vague pains in the back, groin or perineum, the sexual disorders which may arise such as premature ejaculation, painful ejaculation, impotence, etc., which may contribute to a mental state that is more serious than the disease. This patient usually wanders from physician to physician, changing his medical adviser each time his urethritis or epididymitis has an exacerbation, and finally resigns himself to the tender mercies of the quack, charlatan and faith healer.

Hugh Young states, "Chronic prostatitis is an exceedingly common disease. It is often entirely without symptoms and may be discovered accidentally, and is usually associated with vesiculitis. Also, the prostate may be the source of a persistent urethral discharge. . . . The sensory symptoms of chronic prostatitis may be such that they do not reach the dignity of real pain and are described as sensations of fullness, gnawing, constrictions, burning or coldness. When real pain is present it may be referred to the suprapubic region, the bladder neck, the penis, the groin, testicles, sacrum, buttocks, hips, thighs, legs, knees, perineum, rectum or simulate sciatica. Possibly pain in the lower back is the most frequent and most characteristic referred pain in chronic prostatitis. It is often considered by the laity a sign of 'kidney trouble.' It is a very distinctive feature of this pain that it is at its worst when the patient arises in the morning and wears off in the course of the day while arthritic pains usually become worse as activity increases."

Of the seminal vesicles, Young states, "Since seminal vesiculitis so frequently accompanies prostati-

Read at the meeting of the Southeast Missouri Medical Association, Farmington, October 13, 1937.



tis, and since seminal vesiculitis practically never occurs without prostatitis it is not possible to differentiate accurately the symptoms peculiar to disease of either. Urethral discharge and local and referred pains may occur with vesiculitis much as described for prostatitis. Blood and pus in the sperm, painful emissions or coitus, suggest disease of the ejaculatory ducts, ampulla or seminal vesicles, as do recurrent attacks of epididymitis."

Caulk gives a brief and pithy summary of the symptoms which may be caused by seminal vesiculitis as follows: "Various chronic discharges, many chronic bladder distresses, the numerous referred pains in the back, sacral region, hips, legs, perineum, groins, testicles and penis, recurrent epididymitis and sexual derangements, a vast array of joint processes of an infectious nature such as articular rheumatism, rheumatoid arthritis, arthritis deformans and hypertrophic arthritis, numerous renal and cardiac complications, digestive upsets and an array of nervous and mental manifestations which are almost inconceivable."

The diagnosis of chronic prostatitis is made by inserting a finger in the rectum and palpating and then massaging the prostate. Boggy, edematous or indurated prostates will usually reveal pus in a rather copious secretion. The smaller or fibrosed prostates may present a scanty secretion or even none at all, and sometimes several massages on alternate days are necessary before a secretion is expressed. Also, a secretion which was normal on the first day may show pus on the second or third day due to a deeply encapsulated follicular abscess finally breaking down and pus appearing in the secretion. This last condition accounts for many chronic prostatitis cases that go undiagnosed when only one massage is done. Sometimes the drop of secretion works backward into the bladder instead of out through the anterior urethra, and then the voided urine must be searched for pus. Cultures may be made of prostatic secretions to determine the exact organism with which we are dealing.

The seminal vesicles lying just above and lateral to the normal prostate are next massaged and their contents examined for pus, dead sperm or even an absence of sperm in the more severe cases. Only the lower end of the vesicles can be massaged in this manner as they extend upward in a tortuous course for several inches.

Thus we see that due to the proximity of these two organs, lying side by side, as well as that their ducts both open into the posterior urethra, infection of one is almost invariably accompanied by infection of the other.

As to the methods of treatment, heat and massage probably rank first and should always be tried before resorting to more stringent measures. Hot rectal douches, electric heaters and diathermy have all been tried with varying success, the outcome being that they work very well in acute prostatitis and seminal vesiculitis but without result in the chronic type.

Painting of the posterior urethra and verumontanum through the urethroscope with silver nitrate has helped where the veru or the posterior urethra shows granulations or chronic inflammatory products, and any urethral strictures must be dilated.

Foreign protein injections, urinary antiseptics, intravenous therapy and recently even sulfanilamide and prontosil have been tried with varying success.

About three years ago it came to the attention of the writer that Owsley Grant of Louisville, Kentucky, was reintroducing to the medical profession a procedure which had been tried in other hands quite some years before, but using different types of medication, and had later dropped into disuse. This procedure, as revised by Grant, consists of injecting mercurochrome directly into the capsule of the prostate gland, first in one lateral lobe and then the other, by means of a long needle inserted through the perineum. The fact that this drug actually enters and traverses the tissues of the prostate is evidenced by massaging the prostate immediately after withdrawal of the needle and the mercurochrome appears at the urethral meatus. Grant has published papers on this procedure under the title of "Purging the Prostate." However, recognizing the dual infections of the prostate and seminal vesicles he went one step farther and did a bilateral vasostomy and injected the vas. He reported a high average of good results in both gonorrheal and in nonspecific infections.

Being impressed with this procedure and the unusually good results following the writer has, since October, 1934, performed the combined operation on twelve cases; prostatic injection alone on six cases and vas injection alone on two cases, or a total of twenty cases. The vasostomy and perineal injection can both be done under general anesthesia, or the vasostomy can be done under local and the prostate injection under gas or evipal intravenously. It is more practical to put the patient to sleep for the prostatic injection because of quite sharp pain in the prostate region when the gland is distended with mercurochrome. The time spent in the hospital is one or two days. Light massage is given on the fourth postoperative day and every third or fourth day thereafter until four or five massages have been given. This is to rid the gland of excess mercurochrome and dead pus cells. Usually by this time an improvement is evident in the secretion.

Of the six cases of prostatic injection alone, four had a venereal history, two did not. Of these six cases, one nonvenereal case came for the relief of stomach trouble and made a complete recovery, gaining 60 pounds in the next few months. Another came for the relief of rheumatism following successive attacks of gonorrhea. A prostatic injection was done and two weeks later a tonsillectomy was done by a laryngologist. This patient recovered completely but of course whether the prostatic injection or the tonsillectomy did the more good it is

impossible to say. Two cases were injected to clear up the prostate shortly following acute gonorrhea and made complete recoveries. One of these cases developed gonorrhea again a year later and insisted I give him another prostatic injection after all acute symptoms were over, which I did, again clearing up the secretion of pus.

Two of these cases obtained only about 75 per cent improvement. One was nonvenereal and came for the relief of morning drop and, although his prostatic secretion is free of pus to this day, psychic symptoms predominate and he is developing a sex neurosis.

The last case was a man 52 years old with a long venereal history, also a moderate degree of prostatic hypertrophy. He came for the relief of cystitis. He did not receive the prompt relief we expected and we now know that best results are not obtained in hypertrophy cases due to the dilated acini of the prostate gland retaining secretion, pus, mercurochrome, etc.

Six other cases had either prostatic injection or vasostomy and results were classified as unsatisfactory. Of these six, two cases were lost sight of but at the time of last examination they had about 50 per cent improvement. On the remaining four, the combined operation was done with complete recovery in two and only partial recovery in the other two. Of these last two with only partially good results an orchidectomy had been done in one on one side several years previously so that the vas could not be injected on that side and chronic infection probably persisted on that side. The other had a gonorrheal arthritis with improvement of about 50 per cent following operation.

The remaining eight cases had the combined operation performed at the first sitting. Three were post venereal and five had no venereal history. Of these eight, four were completely cured, three were 75 per cent improved and the last case, done three weeks ago, is progressing nicely and seems to be headed for a complete recovery.

Of the three with only 75 per cent improvement, all had a definite sex neurosis and, whereas the secretions showed a return to normal in two and the impotence complained of by the third returned to normal functioning, still it is hard to tell how much of their present trouble is fancied and how much is real.

An analysis of the cases in which the combined operation was done shows seven cases completely recovered both symptomatically and clinically, three cases rated 75 per cent improvement, showing complete clinical recovery but not complete mental recovery, and two cases rated between 25 and 50 per cent improvement, both of which were chronic gonorrheal arthritis cases. In all these cases there were no bad results, i. e., in which the patient was worse off after operation than before, and the operation is devoid of surgical risk.

Vasostomy is still a subject of argument as to whether injection of chemicals into the vas injures

the epithelium and possibly produces occlusion. However, I have been able to demonstrate live spermatozoa on massage months after the operation on quite a few of these cases.

As to the newer procedure of "purging the prostate" some have taken exception to the procedure claiming that experimentally in dogs the path of injection has been followed by fibrosis in the prostate. Be that as it may, I have found no bad results in following this injection procedure and most of the other adherents to this procedure report the same. Grant contends that the best results are obtained in the boggy prostates where the urine contains shreds or where the first glass of urine is still slightly hazy.

#### SUMMARY

1. The symptoms, diagnosis and usual treatment of chronic prostatitis and seminal vesiculitis are briefly discussed.

2. The combined method of treatment of these conditions as reintroduced by Owsley Grant is presented.

3. Of the twenty cases reported, eleven cases were completely cured, five cases 75 per cent improved, three cases 50 per cent improved and one failure.

704 Broadway.

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## MYOMA OF THE VAGINA

WILLIAM BERMAN, M.D.

ST. LOUIS

Myomata of the vagina represent a group of vaginal tumors so rare that every case should be recorded in the literature. Piccagnoni<sup>1</sup> found only one case among 14,000 gynecological patients. Stein<sup>2</sup> is of the opinion that myomata of the vagina may occur more frequently than statistics lead one to believe. Some are overlooked or go unreported. Kleinwächter in 1882 (quoted from Müller<sup>3</sup>) reported fifty cases he collected from the literature between 1773 and 1882 and added three cases of his own. In 1902, Smith<sup>4</sup> reported 100 cases and added one of his own. In 1926 Tuberowsky<sup>5</sup> reported approximately 250 cases from the literature and added three of his own. Since Stein's comprehensive report in 1928, occasional case reports have appeared in the literature. In 1930 Abraham<sup>6</sup> stated that there were approximately 270 cases in the literature. The following case is reported from the gynecological service of the Barnard Free Skin and Cancer Hospital.

#### REPORT OF CASE

S. S., a nulliparous Negro woman aged 31 came to the Barnard Free Skin and Cancer Hospital complaining of vaginal discharge for two years and irregular vaginal bleeding for two months. Menses began at 13, were

From the Gynecologic Clinic, of Barnard Free Skin and Cancer Hospital, St. Louis.



irregular, four days' duration and painful. She had no pressure symptoms but occasional attacks of moderate abdominal pain.

**Physical Examination.**—General physical examination was essentially negative. In the anterior vaginal wall about 3 cm. in front of the cervix was a mass 4 by 8 cm., lying just to the left of the midline. It was nodular, firm, not tender, and covered with normal vaginal mucosa. The mass was separate from the uterus which was twice normal size, forward, irregularly nodular, hard, freely movable, not tender. There was no palpable adnexal pathology. Cervix was normal. The differential diagnosis at this time was between vaginal myoma and an adenomyoma of the vesicovaginal septum. A diagnosis of fibroid uterus was also made.

A cystoscopic examination was made on October 19, 1937, and the trigonum was found bulged out by a mass lying apparently beneath the bladder wall. There was no ulceration or invasion of the bladder mucosa. The left ureteral orifice lay on top of this mass. The right ureteral orifice could not be visualized. The base of the bladder was injected and numerous dilated capillaries were visible. The vertex of the bladder appeared normal.

On October 22, 1937, under local anesthesia, a sagittal incision 2 inches long was made in the anterior vaginal wall and the vaginal tumor enucleated from below. (Fig. 1.) It was found to have a well marked capsule, part of which was later utilized for support of the bladder wall. The superior pole was connected by a broad band to the anterior vaginal wall. The wound was closed by interrupted mattress catgut sutures. The uterine cavity was curetted and an average amount of curettings was obtained which showed only glandular hyperplasia.

On October 30, 1937, eight days following the vaginal myomectomy, a supravaginal hysterectomy was done for uterine myomata. Tubes and ovaries were removed because of chronic salpingoophoritis. The patient's post-operative course was uneventful.

**Pathological Examination.**—The vaginal tumor was an irregular mass measuring 4 by 4 by 7 cm. On cut section there were numerous interlacing fibers, many of which were glistening and slightly elevated above the remainder of the tissue. The tumor, greyish-pink in color, was surrounded by a definite capsule.

Microscopically, it was made up of bundles of fibrous and smooth muscle tissue. The center of the tumor showed beginning hyalinization.

The study of vaginal myoma is most important from the standpoint of diagnosis. These tumors are relatively free of symptoms. Pressure symptoms occasionally arise. There may be enough pressure

upon the urethra to require catheterization. The tumor may simulate prolapse and cystocele. Menstrual disturbances and irregular vaginal bleeding are not as common as they are in uterine fibroids. When complicated by pregnancy, serious dystocia may result, the importance of which is emphasized by Smith who states that 84 per cent of these tumors occur in women of childbearing age. They may, however, occur in any age group, the youngest being a 24-hour-old infant reported by Williams.<sup>7</sup> Stoeckel<sup>1</sup> considers some causal relationship between vaginal myomas and the ovary since the age group, according to him, lies between puberty and the menopause. Cases have been reported in women as old as 71 years.

There are numerous tissues associated with the vagina from which these tumors may arise. Stoeckel<sup>1</sup> states that they may spring from the bladder, urethra, rectum, pelvic connective tissue or the broad ligament. They may also arise from a submucous uterine fibroid which grows into the vagina and becomes secondarily attached to the vagina. These tumors must be distinguished from primary tumors of the bladder and urethra encroaching upon the vagina.

Only an occasional report is found of the simultaneous occurrence of vaginal myoma and uterine myoma. Stoeckel (1930) gives references of ten such cases.

The majority of the reports state that the site of predilection of these tumors is the anterior vaginal wall. According to Müller 65 per cent, and according to Giesecke<sup>8</sup> 80 per cent arise in this location. Stoeckel<sup>1</sup> found that in general these tumors are four times as frequent in the anterior as in the posterior vaginal wall.

These tumors can be removed vaginally. The prognosis is good and, if the tumor is entirely removed, the chance of recurrence is negligible.

Barnard Free Skin and Cancer Hospital.

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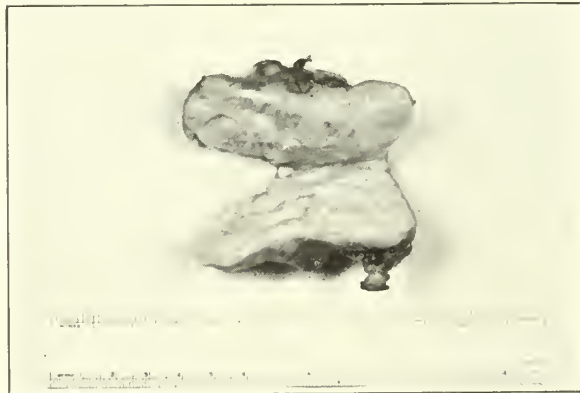


Fig. 1. Vaginal myoma showing well marked capsule and broad band which was attached to anterior vaginal wall.

*Brucella melitensis*, originally known as *Micrococcus melitensis*, is pleomorphic, its morphology in part determined by the culture medium or the preparation used for its study. Morphologically it is considered variously by several authors on bacteriology to be a coccus, a bacillus or a coccobacillus. On this basis, with the effect of the drug in question established against certain other pathogenic bacterial forms, Robert L. Stern and Ken W. Blake, Los Angeles (*Journal A. M. A.*, May 7, 1938), working independently, gave sulfanilamide in therapeutic doses to each of three private patients suffering from clinically and serologically established undulant fever. Highly satisfactory and prompt results with clinical cure followed. The maximal dosage according to present standards appears to be necessary.

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JUNE, 1938

## EDITORIALS

JAMES R. McVAY, M.D.

PRESIDENT-ELECT, MISSOURI STATE MEDICAL  
ASSOCIATION, 1938-1939

Dr. James R. McVay, Kansas City, was elected President-Elect of the Missouri State Medical Association by the House of Delegates at the Jefferson City Session, May 2, 3 and 4. He will serve as President-Elect during 1938-1939 and will be installed as President at the Excelsior Springs Session in 1939 and will serve as President in 1939-1940.

Dr. McVay was born in Spickard, Missouri, on June 5, 1891. He attended the Trenton (Missouri) High School and was graduated from that school in 1908. He received his A.B. degree from the University of Missouri in 1912 and M.A. degree in 1913. He received his medical degree from the Johns Hopkins University, Baltimore, in 1915. He was surgical intern at the Lakeside Hospital, Cleveland, in the service of Dr. George W. Crile in 1915 and 1916. He was a fellow in surgery at the Mayo Foundation from 1916 to 1920, and was first lieutenant in the Medical Corps of the United States Army from February, 1918, to April, 1919.

He began the practice of surgery in Kansas City in October, 1920. He became a member of the Jackson County Medical Society in 1921 and a Fellow of the American Medical Association in 1923. He became a Fellow of the American College of Surgeons in 1927, member of the Western Surgical Association in 1925, member of the Founders Group of the American Board of Surgery in 1937, member of the Association of Resident and Ex-Resident Physicians in the Mayo Clinic in 1922, a member of the Frisco System Medical Association and of the Medical Society of the Missouri Pacific Railroad.

Dr. McVay became active in organized medicine soon after his identification with the Association. From 1923 through 1926 and in 1931, 1932, 1937 and 1938 he was a delegate from the Jackson County Medical Society to the Annual Sessions. He was Chairman of the Nominating Committee in 1924, 1926 and 1931 and a member of the Committee in 1923. He served as a member of the Committee on Postgraduate Course from 1929 through 1934. In 1935 he was appointed a member of the Committee



Photo by Straus-Peyton

JAMES R. McVAY, M.D.

on Medical-Legal Affairs and in 1937 was named Chairman of that Committee.

In 1926 Dr. McVay was made Alternate Delegate to the American Medical Association. In 1935 he was elected Delegate to the American Medical Association and was re-elected in 1937. The San Francisco Session will be the fourth Session of the American Medical Association at which Dr. McVay has represented the Missouri State Medical Association. He was instrumental in obtaining the 1936 Session of the American Medical Association for Kansas City and served as co-chairman of the committee on arrangements.

He served on the State Board of Health from June, 1923, to September, 1925, resigning soon after being reappointed for a term of four years.

Dr. McVay has proved himself not only an able and efficient member of organized medicine but untiring in the discharge of all obligations laid upon him. All his activities of the past and the esteem in which he is held by all who know him give assurance that the honor has been well bestowed and that the Association under his leadership will make notable progress toward the accomplishment of the purposes of our organization.

## JEFFERSON CITY SESSION

The Eighty-First Annual Session of the Missouri State Medical Association convened in Jefferson



City, May 2, 3 and 4, with 674 in attendance, the largest number ever registering in the history of the Association.

Dr. Dudley S. Conley, Columbia, presided at the Session. Dr. B. W. Hays, Jackson, was installed as President at the Wednesday afternoon session of the House of Delegates.

Dr. James R. McVay, Kansas City, was elected President-Elect. Other officers elected were: Vice Presidents, Dr. D. C. McCraw, Bolivar, Dr. L. H. Fuson, St. Joseph, and Dr. C. A. W. Zimmermann, Cape Girardeau; Secretary-Editor, Dr. E. J. Goodwin, St. Louis; Assistant Secretary and Business Manager, Mr. E. H. Bartelsmeyer, St. Louis; Treasurer, Dr. Ralph L. Thompson, St. Louis.

Councilors were elected for the odd numbered districts as follow: First District, Dr. A. S. Bristow, Princeton; Third District, Dr. Curtis H. Lohr, St. Louis; Fifth District, Dr. W. A. Bloom, Fayette; Seventh District, Dr. E. P. Heller, Kansas City; Ninth District, Dr. E. C. Bohrer, West Plains. The President appointed Dr. E. J. Nienstedt, Sikeston, Councilor of the Tenth District to succeed Dr. A. H. Marshall, who resigned, and the Council approved the appointment.

Drs. A. R. McComas, Surgeon, and H. L. Kerr, Crane, were elected Delegates to the American Medical Association and Drs. Frank R. Teachenor, Kansas City, and W. F. Francka, Hannibal, Alternates.

In accordance with an amendment to the Constitution adopted by the House of Delegates, the Delegates present from the respective districts will convene on the third day of the Annual Session and elect the Councilors whose terms expire. The amendments to create the offices of speaker and vice speaker failed of adoption.

Resolutions were passed regarding introduction in the legislature of bills on basic science law, antenatal examination, integration of the medical profession and restriction of use of harmful drugs. A resolution was passed directed toward the inclusion in public school curricula of accredited courses in anatomy and physiology.

Recommendations for committees on Conservation of Eye Sight, Automobile Accidents and Rural Medicine were approved.

The scientific sessions were unusually well attended and extensive commercial and scientific exhibits won the praise of the members.

Members of the Cole County Medical Society proved themselves excellent hosts both in entertainment and in arrangements made for the Session.

Excelsior Springs was chosen for the place of meeting in 1939.

Minutes of the Session will be published in the July issue of *THE JOURNAL*.

#### DR. ELLIS FISCHEL KILLED IN ACCIDENT

On May 14 tragedy overwhelmed the Association when Dr. Ellis Fischel, St. Louis, was killed in an

automobile accident while on his way to Jefferson City. Reports indicate that he crashed into a truck which was crossing the road to pull in at a filling station near the town of Useful, about thirty-five miles east of Jefferson City. Dr. Fischel was killed instantly and Mrs. Fischel, who was traveling with him, was critically injured. At this time she is recovering in a hospital in St. Louis.

The death of Dr. Fischel removes one of the most outstanding surgeons in the country and particularly a man who had given a large part of his life work to the study of the treatment of cancer. He was for many years the chairman of the Missouri Committee of the American Society for the Control of Cancer and at the time of his death was Chairman of the State Association Committee on Cancer and Chairman of the Commission on Cancer of the State of Missouri. Probably no more than any man in the state, next to Governor Stark, exercised the guiding control and intelligent direction of the members of the legislature in the passage of the bill that established the Cancer Hospital of Missouri. His death is a serious loss not only to the medical profession of the state but to the people who had learned to depend upon him for intelligent activity in establishing modern methods of care and treatment of cancer patients. An account of his life and activities will appear in the next issue of *THE JOURNAL*.

#### PROPOSED NEW BUILDING FOR ARMY MEDICAL LIBRARY AND MUSEUM

A bill authorizing a new building for the Army Medical Library and Museum in Washington, D. C., was introduced in Congress on April 28. The library, frequently called the Surgeon General's Library, is the largest medical library in the world, containing nearly 500,000 books, and if pamphlets are included, over a million volumes.

The bill provides for a building, the cost not to exceed \$3,750,000, which would give enlarged and modern facilities for the care and use of this library. The continuous accumulation of books and periodicals and the increased demand for service as the field of medicine has broadened and the facilities of the library have increased have made efficiency in administration difficult in the present crowded and outmoded building. The present building housing both the library and the museum was erected fifty years ago, is a small red brick building on an inaccessible site, is not fire proof and in addition to being inadequate to its needs is decidedly incongruous with other public buildings.

The library was conceived by Surgeon General Lovell in 1836 and through interest of successive surgeon generals has become the largest medical library in the world. In addition to the many physicians who have access to the library thousands use it through the interlibrary loan system. Men engaged seriously in medical research, teaching and writing, depend extensively on the library.

In the same building is the Army Medical Museum established by the Medical Department of the Army in 1863 and now the largest museum of human pathology in the United States.

Few physicians in the United States have not reaped benefit from this library, at least through study of books, the writing of which was assisted by the use of the library. The profession has an opportunity of repaying its debt to the library and of securing even greater benefits in the future by urging the passage of these bills, S. 3919 and H. R. 10455. Resolutions adopted by component societies and forwarded to Congressmen and letters from individual physicians would emphasize to Congress the importance of this measure. As Congress is planning early adjournment prompt action is necessary.

#### SAN FRANCISCO SESSION OF THE AMERICAN MEDICAL ASSOCIATION

The American Medical Association will convene in San Francisco June 13 to 17 for its eighty-ninth Annual Session. The House of Delegates will meet in the Hotel Sir Francis Drake and the general scientific meetings will be held in the Opera House and in the Auditorium of the Veterans' Building, both in the Civic Center. Sectional sessions will be held in the Opera House, the Veterans' Building, the Empire Hotel and the City Health Building. General headquarters, scientific exhibits, registration bureau, technical exhibits, information bureau and branch postoffice will be located in the Civic Auditorium.

The House of Delegates will convene at 10 a. m. Monday, June 13. The scientific assembly will open with a general meeting Tuesday, June 14, at 8 p. m. The sections will meet on Wednesday, Thursday and Friday.

Dr. J. H. J. Upham, Columbus, Ohio, will preside at the Session. The President-Elect, Dr. Irvin Abell, Louisville, Kentucky, will be installed at the general meeting on Tuesday evening.

Missouri Delegates to the Session are Drs. Carl F. Vohs, St. Louis; James R. McVay, Kansas City; A. R. McComas, Sturgeon, and H. L. Kerr, Crane. Dr. E. H. Skinner, Kansas City, is a Delegate from the Section on Radiology.

Members from Missouri who will appear on the program and their subjects are: Dr. Theodore E. Sanders, St. Louis, "Mixed Tumors of the Lacrimal Gland"; Dr. J. Albert Key, St. Louis, "Common Sense in the Treatment of Acute Hematogenous Osteomyelitis"; Dr. Wendell G. Scott, St. Louis, "Recording the Movements of the Gastro-Intestinal Tract by Roentgen Kymography"; Dr. Robert Elman, St. Louis, "Intravenous Alimentation With Special Reference to Protein (Amino Acid) Metabolism," and Dr. Sherwood Moore, St. Louis, "Body Section Radiography in Surgical Conditions."

Discussions will be opened by the following Missouri members: Drs. Albert N. Lemoine, Frank R.

Teachenor, C. C. Dennie and Rex. L. Diveley, Kansas City; Charles H. Eyermann, David P. Barr, G. D. Royston, Millard F. Arbuckle, Charles W. Duden and Frank D. Gorham, St. Louis.

Among scientific exhibits are the following by Missouri physicians: Dr. August A. Werner, St. Louis, "Theelin, Clinical Studies"; Dr. Sherwood Moore, St. Louis, "Body Section Radiography," and Dr. Wendell G. Scott, St. Louis, "Kymographic Studies of Gastro-Intestinal Movements."

#### THE RATE OF REPRODUCTION IN THE UNITED STATES

Previously we commented upon the seriousness with which a decline in the birth rate must be regarded.<sup>1</sup> At that time we referred to the observations of Pearl who suggested that the change from a rural to an urban type of existence has actually been accompanied by a decline in male fertility. The countries of Western Europe have treated us to the spectacle of an armament race in which first attention has been accorded the birth rate. Statistical study in these countries has revealed a falling birth rate. Schemes for national aggrandizement or for self protection depend fundamentally upon the presence of a sufficient number of males capable of bearing arms. The persons in charge have seen to it that suitable lures are set up to the end that there be more soldiers.

It may be difficult to assign an exact reason for increasing the population of this already populous country. Surely we are faced with no immediate need for protection from foreign powers. We have never been an aggressive nation seeking to carve out additional territorial possessions. But in the natural course of events it would seem the better part of wisdom not to permit any considerable decline in our present population. Whether the national economy might be better served by a lesser number of persons living in this country is not germane to this discussion. A sort of national pride must serve to keep us bearing children at least in such number that there will not be fewer persons to continue the present cycle of civilization.

For these reasons the recent statistical survey<sup>2</sup> which shows a steadily declining birth rate must evoke the consideration of all persons concerned over social progress. It is obvious that if there were no mortality until after the child bearing period had passed, each mother must produce one daughter in order to maintain a stationary population. That daughter in turn must live through the normal reproductive period without death in order that she, too, could give birth to one daughter. Actually each of these mothers must bear one daughter and 1.057 sons to maintain the numerical intactness of the

1. Endorsement of Propaganda, *J. Missouri M. A.* 34:57 (February) 1937.

2. The Decline in American Reproductivity, *Bulletin, Metropolitan Life Insurance Company* 19:3 (March) 1938.



nation. We are not concerned here with the increasing life expectancy of each person actually born nor with the shift toward an increasing number of persons in the older age groups. For if the ratio of births to deaths did not remain at least constant there would be a gradual decrease in the population.

In all states of the union there has been a considerable decline in the total number of births per potential mother in the years 1929 to 1931 as compared with the gross reproductive rate for the years 1918 to 1921. In the earlier period all but two states experienced a gross reproductive rate considerably in excess of that necessary to maintain a constant population. In the later period nine states actually showed a decline in the number of births per mother so great that the numerical strength of the population cannot be maintained. The figures may be put in another manner. In those states in which the reproductive rate for boys and girls per mother was more than four, the decline in the number of births from the earlier to the later period was 25.5 per cent. In those states in which the reproductive rate was between three and four, the decline amounted to 20.8 per cent. In those states in which the reproductive rate was between two and three (barely enough to maintain a stationary population) the decline was 17.2 per cent. These figures would suggest that there is some natural phenomenon which of itself tends to limit or to raise the reproductive rate of the nation's mothers, or that the efforts of organizations formed to limit the woes of child bearing and being born have been uncommonly successful.

It is difficult to believe that in the period represented by the survey there could have been effective dissemination of any man proposed method of affecting the birth rate. Furthermore since some of the states showing the greatest decline in the reproductive rate were among those generally noted for the illiteracy of their populations it is difficult to believe that methods of altering the rate of conception could have penetrated to the masses of the population. Actually, statistical analysis of the figures leads to the conclusion that there has been a general relative leveling of the gross reproductive rate throughout the country. Whether it were wise to interfere further in this natural process is a question to be decided by the conscience of the whole population. We cannot presume to guess what may be the ultimate effect of a declining population upon the social and economic welfare of the nation. We cannot presume to guess "whether," even now, the declining ratio between births and deaths can be taken as early evidence of race suicide or racial degeneration."

We may, however, presume to call to the attention of any group of well intentioned persons who would further interfere in this natural change in the gross reproductive rate of the country at large, the possible deleterious result which may follow their activities.

## NEWS NOTES

A pair of plus 400 reading glasses in amber Demi-Shell frame were found in the House Chamber during the Jefferson City Session. The owner may obtain them from the office of the Secretary.

Dr. Frank D. Dickson, Kansas City, was elected president-elect of the American Orthopedic Association at the Atlantic City session, May 3 to 5.

The third annual meeting of the National Society for the Advancement of Gastroenterology will be held on June 1 and 2 at the Squibb Hall, Squibb Building, New York.

Dr. George H. Thiele, Kansas City, was a guest at the annual spring clinic of the Providence Hospital Intern Alumni Association in Detroit on May 12. He spoke on "Orthopedics."

The Trudeau Club of St. Louis met at the Robert Koch Hospital on May 5. Drs. J. T. Maher and Paul Murphy, Koch, and I. J. Flance and A. J. Steiner, St. Louis, presented the program.

Dr. Frederick J. Taussig, St. Louis, was appointed a member of the State Cancer Commission by Governor Lloyd C. Stark to fill the vacancy caused by the death of Dr. Ellis Fischel, St. Louis.

Dr. James Barrett Brown, St. Louis, was a guest of the Louisiana State Medical Society at its annual session in New Orleans on May 2, 3 and 4. He spoke on "The Care of Compound Injuries of the Face."

The St. Louis Surgical Society met at St. John's Hospital, St. Louis, on April 20. Appearing on the program were Drs. G. T. Gafney, William J. Gallagher, William P. Glennon, Grayson Carroll, J. C. Peden and J. McH. Dean, St. Louis.

Dr. Avery P. Rowlette, St. Louis, was given the annual award of the Young Men's Division of the St. Louis Chamber of Commerce for performing the most outstanding civic service during the preceding year. Dr. Rowlette is medical director of the St. Louis City Hospital.

Drs. O. Jason Dixon, Kansas City, and Evarts A. Graham, St. Louis, were guests of the Iowa State Medical Society at its meeting in Des Moines May 11 to 13. Dr. Dixon discussed "Modern Methods in the Treatment of Mastoid Disease" and Dr. Graham spoke on "Thoracic Surgical Diseases."

Drs. Paul S. Lowenstein and Herman M. Meyer, St. Louis, were guests of the Madison County (Illinois) Medical Society at Alton, Illinois, March 10. Dr. Lowenstein discussed "The Diagnosis and Treatment of Peripheral Arterial Diseases," and Dr. Meyer spoke on "Newer Concepts in the Treatment of Diabetes."

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Dr. E. Lee Miller, Kansas City, was the recipient of a certificate of merit presented by the University of Missouri Alumni Association. The award was presented at a luncheon of the Medical Alumni Association of the University of Missouri at Jefferson City, May 3. Dr. Miller is the first person from the School of Medicine to receive this award.

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Dr. R. B. Schutz, Kansas City, received the cash award presented by the Committee on Maternal Welfare for the most appropriate article appearing in *THE JOURNAL* during the year relating to obstetrical care. The title of the article was "Bleeding in Pregnancy." It was published in the September, 1937, issue of *THE JOURNAL*. The award was presented at the Annual Dinner of the Committee on Maternal Welfare at Jefferson City, May 2.

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Appearing on the program of the second annual meeting of the Missouri Association for Mental Hygiene at Jefferson City on May 1 were Drs. Val B. Satterfield, St. Louis; F. A. Carmichael, Fulton, and R. P. C. Wilson, Marshall. Drs. C. F. Adams, Jefferson City; B. Landis Elliott and G. Leonard Harrington, Kansas City; Emmett F. Hootor, Farmington, and Orr Mullinax, St. Joseph, opened discussions of papers.

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The Missouri Chapter for the Advancement of Gastro-Enterology held its annual meeting in the St. Louis Medical Society Auditorium on April 13. Drs. Frank R. Finnigan and J. W. Thompson, St. Louis, presented a paper on "Megacolon" with a radiologic demonstration. The following officers were elected: President, Dr. Frank D. Gorham, St. Louis; vice president, Dr. W. J. Siebert, St. Louis; treasurer, Dr. L. P. Gay, St. Louis, and secretary, Dr. H. L. Joslyn, St. Louis.

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The Missouri Public Health Association met in Jefferson City on May 13 and 14. Dr. Thomas Par-ran, Jr., Surgeon General of the United States Public Health Service, addressed the session on "The Syphilis Control Program of the United States Public Health Service." Dr. W. K. Sharp, Regional Consultant, United States Public Health Service, spoke on "Public Health Trends in Missouri." Missouri physicians appearing on the program were Drs. T. R. Meyer, Clayton; H. I. Specter, and J. F. Bredeck, St. Louis; Edwin H. Schorer, Kansas City. Presiding at sessions were Drs. Edwin H. Schorer, Kansas City; M. B. Clopton, St. Louis, and Harry F. Parker, Jefferson City.

The second annual meeting of the Advisory Committee to the Committee on Cancer of the Missouri State Medical Association was held on May 4 in the form of a luncheon at the Missouri Hotel in Jefferson City. The meeting opened at 1:00 p. m. following the morning session of the Missouri State Medical Association Annual Meeting. Fifteen doctors attended the meeting, which was called to review the work done by the Committee on Cancer during the year and to receive suggestions which might be incorporated in the program for the coming year.

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The Nebraska State Medical Association had as guests at its annual session in Lincoln, Nebraska, April 25 to 28, Drs. C. C. Dennie and Lawrence P. Engel, Kansas City, and August A. Werner, V. P. Blair and John Zahorsky, St. Louis. Dr. Dennie presented papers on "The Immunological Aspects of Syphilis" and "The Effect of Malaria on Syphilis and Other Diseases in South America." Dr. Engel spoke on "Important Points in the Diagnosis and Treatment of Acute Intestinal Obstruction" and "Administration of Fluids to Surgical Patients." Dr. Werner discussed "Obesity" and "The Female Sex Hormones." Dr. Blair talked on "Harelip" and "Nose Restorations." Dr. Zahorsky spoke on "The Clinical Aspect of Poliomyelitis" and "Immediate Treatment of Facial Injuries."

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The United States Public Health Service announces the publishing of "The Diagnosis of Syphilis by the General Practitioner" by Dr. Joseph Earle Moore, Baltimore. The book was written in response to many inquiries from physicians asking advice on problems of diagnosis. The book was written for the purpose of giving the general practitioner a handy, clearly written manual on diagnosis. Many tables are used to assist in differentiation between actual manifestations of syphilis and other diseases with which they may be confused. The booklet is divided into the following chapters: "The Diagnosis of Syphilis: General Considerations," "The Diagnosis of Early Syphilis," "The Diagnosis of Latent, Prenatal and Congenital Syphilis" and "The Diagnosis of Late Syphilis."

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After fifteen years of litigation in state and federal courts the case against fraudulent substitutes for milk now appears to be definitely closed. In a six to one decision the United States Supreme Court on April 25 held the Federal Filled Milk Act of 1923 constitutional. The case had come up to the Supreme Court from the Federal District Court at Springfield, Illinois, where the Carolene Products Company, Litchfield, Illinois, was indicted by the government for shipment in interstate commerce of its filled milk products, "Milnut" and "Carolene." The lower court had previously declared the law unconstitutional. The decision establishes the power of the Congress to exclude from interstate commerce fraudulent substitutes for milk or cream



whose use in the states for which they are destined are conceived to be injurious to the public health. Decisions are pending in several states, including Iowa, Missouri, Michigan and West Virginia. The enforcement of the Anti-Filled Milk Law is now in the hands of the Federal Food and Drug Administration.

The Cancer Commission of the State of Missouri met with the committee on cancer of the Buchanan County Medical Society at the St. Joseph State Hospital on March 28. Plans were formulated for the organization of a tumor clinic and hospital floor at the State Hospital for the care of indigent cancer patients. The service began on May 15. The hospital floor for cancer patients at the Fulton State Hospital has been in operation since March 21. The outpatient clinic is held as formerly, every Wednesday at 2 p. m., and patients are admitted to the hospital for major surgery, roentgen ray and radium treatment which cannot be administered to ambulatory patients. The Cancer Commission desires that the members of the Association know the facilities of these two hospitals and that no indigent cancer patient will suffer through lack of care. Before patients are sent to the Fulton Hospital it is asked that the attending physician communicate with the hospital authorities with a brief description of the case and certification of the known indigency of the patient.

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

- Calco Chemical Co., Inc.
- Mandelic Acid-Calco
- Cheplin Biological Laboratories
- Cheplin's Epinephrine Hydrochloride Solution,  
1:1000, 10 cc.
- Cheplin's Epinephrine Hydrochloride Solution,  
1:1000, 30 cc.
- Lederle Laboratories
- Viosterol (A. R. P. I. Process) in Oil
- Eli Lilly & Co.
- Ampoules Metycaine 10 per cent for Spinal Anesthesia
- Ampoules Metycaine 20 per cent for Infiltration  
and Regional Anesthesia
- Wm. S. Merrell Co.
- Amopules Solution Dextrose 50 per cent, 100 cc.
- Parke, Davis & Co.
- Cevitamic Acid—P. D. & Co.
- Tablets Cevitamic Acid—P. D. & Co., 25 mg.
- Schiffelin & Co.
- Sulfanilamide Tablets—Schiffelin, 5 grains
- S. M. A. Corporation
- 3:Pyridine Carboxylic Acid (Nicotinic Acid)—  
SMACO
- 3:Pyridine Carboxylic Amide (Nicotinic Acid  
Amide)—SMACO

## MISCELLANY

### CARE OF THE EXPECTANT MOTHER

RALPH R. WILSON, M.D.

Chairman, Committee on Maternal Welfare, Missouri  
State Medical Association

KANSAS CITY, MO.

The care of the expectant mother is a subject that has come before the American public in the last few years with a great deal of force. This is because for the last twenty-five years physicians all over the United States have been attempting to interest various organizations in the problems of childbirth. When investigators in Missouri took up this problem they found that the Missouri mother was given little more care than those of any of the other states in this country. The Surgeon-General of the United States Public Health Service, Dr. Thomas Parran, Jr., recently contributed some interesting facts about the conditions and circumstances under which American women bore children. He estimated that 40,000 mothers each year bear children without a physician in attendance. This number of people if represented in the population of a single city would constitute quite a metropolis. Some further studies by Isabelle Keating, which appeared in the *Literary Digest* for January 15, 1933, are equally shocking. She estimates that a mother dies in childbirth every thirty-seven minutes in this country; a baby is born dead every seven minutes; and, in addition to these figures, another baby dies every eight minutes before it reaches the first month of life. Therefore, in considering the cause of death in our whole nation, only one cause exacts a greater death toll year by year and that condition is heart disease. While our native state may bask in the glory achieved by the Missouri mule and by the beautiful women living within its boundaries it can carry no laurels as to the care it provides the expectant mother at a time when she is called upon to perform the highest function of her race.

The care and attention that a mother expecting to give birth to a child is entitled to receive is technically known as prenatal care. Within the last few years this term has become fairly well known among all classes of people because of the interest shown by magazines and radio talks and health meetings. It is an epoch of great importance to the entire civilized world that within the last twenty-five years people have put aside false modesty and timidity and have learned to discuss freely the problems and difficulties of childbirth. Every mother has a period of many months in which to prepare for the event of becoming a successful mother. It is regrettable that until very recent years she has had comparatively little instruction or training for this responsibility. For nearly half a century the farmers of the Middle West have been studying the methods that would breed the best cattle and hogs and the way of rotating crops to provide the best harvest; but, in proportion, little study has been given to the most successful way of passing through motherhood. Our native state has the unique position of being both an agricultural state and an industrial state. Within our borders are combined both that class of people that are chiefly city and factory workers and those that are rural and farm workers. Although their day to day problems may differ in many respects they have one interest in common which is the successful production of their offspring. It is regrettable to say that in the past neither class has taken an interest in this matter equal to that of their other activities.

This is one of a series of medical broadcasts given under the auspices of the McAlester Memorial Foundation of the Missouri State Medical Association.

There is complete agreement among all those who have studied the situation that the great number of deaths occurring to mothers and infants is due to one main cause, the lack of proper care for the mother during the time she is expecting the arrival of her child. This care is not a haphazard procedure. Graduates of class A medical schools throughout the country know these standards well before they are allowed to be graduated. Practically all of them improve this knowledge by internship in recognized hospitals; and, still others become proficient in the subject by further years of training in hospitals classified for that purpose by the American Medical Association. The type of care that an expectant mother is entitled to receive is so well worked out and standardized that any mother residing in Missouri, upon application to the Missouri State Board of Health at Jefferson City, can receive a series of nine letters briefly outlining what her care should be. Hundreds of these letters go out from the State Board of Health at Jefferson City every month, but there are still a great number of women who are not acquainted with this privilege which they may have merely for the asking.

Three years ago there was put into operation the so-called Missouri Plan for Maternal Welfare and Child Care. This plan was organized and is still directed by the Missouri State Board of Health and by the Missouri State Medical Association. Under this plan speakers qualified in the field of maternal and child care are lecturing throughout the state, both to groups of physicians and to groups of people at large who are interested in improving the hazards that threaten successful motherhood. It is hoped that during the year 1938 more people will be reached than have been during the early years of organization of this plan. From these lectures it is likely that many women are hearing for the first time the value of the care that the expectant mother is entitled to receive.

Many times there comes the question: "When should an expectant mother report to her physician?" It requires but little consideration to realize that a woman actually begins to prepare for motherhood as soon as she reaches puberty. Lack of education about puberty and about the monthly cycle, even before marriage, may lead a perfectly healthy girl into a state of poor health; but in case a young woman has had little or no need for supervision before her marriage, certainly at the time of procuring a marriage certificate she should realize the importance of sound medical advice and a thorough physical examination. If, however, she has already become a wife and realizes that she is to become a mother, certainly it is highly important that she report to a physician for care at the earliest moment this condition is suspected. Some of our more progressive states have enacted laws that make it necessary that couples applying for marriage certificates be able to show satisfactory health certificates. It is difficult to estimate the number of cases each year of couples marrying whose children are likely to be born with marks of venereal disease, congenital blindness, congenital deafness and even insanity itself because their parents were unfit to be parents. Many times every day in our own state a pitiful heart throb starts in some parent whose child is born without equal chances for a successful life and career.

Even yet, in spite of newspaper and magazine articles, radio talks and lectures, there bobs up the occasional question: "What is the use or purpose of the care of the expectant mother?" Of course, there can be only one answer, i. e., "To instruct and guide and care for the mother in such fashion that she will come to the time of childbirth in such condition that she may successfully complete it and have as its reward not only health for herself but a living and healthy child." Pregnancy is not a disease in itself. It is just as natural for

a woman to bear and give birth to her child as it is for her to grow the hair on her scalp and to have it cast off in the usually accepted way. It must be remembered, however, that in case there is a disease or abnormal condition existing before pregnancy that pregnancy is almost sure to make this disease or abnormal condition worse.

What farmer plants his crop without first conditioning the soil, or expects to harvest it without cultivation or effort? Mother Nature has given members of the human race an intelligence which is not to be used to thwart or neglect her well known laws. The human race has not been limited to seasons for its reproduction as have other mammals and plants, but with equal certainty it is proved that "when Mother Nature is left to take her own course" unassisted, a hearty and healthy offspring may not be the outcome.

There are many details which constitute a complete or satisfactory type of care for the expectant mother, which can be only mentioned at this time. There is the matter of adjusting the diet from month to month. There is the matter of satisfactory body weight which of course applies differently to each individual. There is the matter of frequent urine examination; the observation of blood pressure at frequent intervals; also the type of clothing as well as the amount of proper exercise. For the Wassermann test to be of the greatest value it should be taken before the beginning of pregnancy or at least during the early months. It is now known that vitamins and minerals play a far greater part in the health of the mother and her child to be than has previously been recognized. Every woman is a type unto herself and should be observed not only as to the points above mentioned but as to many others which only a conscientious and qualified physician can point out from frequent observations. The significance of bleeding during pregnancy, the importance of kidney or heart trouble which usually appears in the form of swelling of the hands and feet, and the danger of underdeveloped bones as a cause of difficult labor can be satisfactorily understood by the attending physician only after he has had an opportunity of making thorough physical examinations of his prospective patient.

One of the three main causes of death in a new mother is (1) infection which many times is due to a germ the mother carried before the birth of her child. Another way infection may be started is by the improper care of some attendant, or even the patient herself, who does not know how germs are carried. The next most common cause of death is (2) toxemia, or a form of poisoning of the whole system, which may be due either to a delicate condition existing before pregnancy, or it may be due to improper diet and elimination during pregnancy. The other most common cause of death is (3) hemorrhage which is due to a variety of things, all of which should be in the mind of a physician every time he attends the birth of a child. All of these bring one to a single conclusion, i. e., that it is obvious that proper care during the expectant period will save many mothers unnecessary tragedies and complications. In one sense of the word, many of these are preventable but the responsibility cannot be placed on the physician alone until a patient is willing to follow his instructions implicitly. Many times the onset of a late complication actually has had its beginning before anyone except the expectant mother is aware of her condition. For instance, a tumor complicating pregnancy or even multiple pregnancy (twins) presents an unusual problem for the physician to handle, and one that he can discover and prepare for ahead of time if given the opportunity to examine the patient. The appalling death rate that exists in Missouri is as much a responsibility of the people as it is of the profession. Physicians of the ethical, recognized medical profession are unwilling to approach people about medical care and maternal care



until such individuals present themselves for that purpose.

No doubt there are still a few individuals who misunderstand the general attitude of the recognized ethical medical profession. Occasionally physicians are viewed with suspicion and distrust, more or less as if they were "city slickers." Only a few of many instances need be pointed out here to prove the fallacy of this attitude. For years in our own state physicians have made good incomes from unfortunate individuals victimized by typhoid fever, malaria fever, diphtheria and venereal diseases. Year by year such incomes are now decreasing at surprising rates because of the consistent effort by the same physicians and by health agencies to prevent these conditions by vaccinations and health education. Any physician will gladly vaccinate a child against smallpox for a small fee in comparison to what he would receive for attending the same child over a period of weeks had it acquired smallpox. The recognized ethical medical profession, individually and collectively, is constantly striving to prevent epidemics and suppress in advance all factors that may contribute to ill health of the individual or of the community at large.

To summarize these brief remarks suffice it to say that the care of the expectant mother is an advanced science; but its value to the mother will depend entirely upon the interest manifested by the people at large. I am completely unaware of any application of modesty that would prevent a woman from seeking information and attention any time during her reproductive life relative to her likelihood of enjoying successful motherhood. Likewise, I am completely unaware of any biologic law which decrees that every woman should be such a masterpiece of nature that she should accomplish such a complicated task as to become a successful and competent mother without the advice of physicians who are trained and experienced in that field. What woman could hope to become successful in the field of art or music without advice and assistance of well trained teachers?

In conclusion, the advice of greatest importance is: "Go to your doctor early, go to your doctor frequently, and then follow your doctor's instructions."

201 Plaza Theatre Building.

## THE CARE OF INFANTS

O. F. BRADFORD, M.D.

Pediatrician, Missouri State Board of Health

COLUMBIA, MO.

Infant care and child hygiene are as old as civilization. The savage and the barbaric tribes did not care so much for babies and children. The baby needed help in traveling. He had to be fed and sheltered, and he got sick and died when exposed to the hardships of the day. He could not fight beasts and hostile tribes and he starved when food was scarce. He was a weakling more despised than loved. Accordingly, he received little care and was often deserted to die.

As we emerge out of the folklore of this dim past into the recorded tale of civilization we find pictures, songs and stories proclaiming love for the infant. Old Chinese, Egyptian and Indian records tell us of this love and a concern for the helpless child. In the Old Testament and in the Talmud are sketches of the care and feeding of the child.

It was then, and is now, the sacred duty and privilege of the mother to nurse at her own breast the new-born babe. When breast milk was not available they fed

babies modified cow's milk or goat's milk, sweetened with honey.

Dirty habits and ignorance of the existence of germ produced disease caused an appalling death rate among the young in ancient times.

The fact that germs could not be seen with the naked eye placed a mystery on sickness and death. In people's minds it was black magic wrought by demons and evil spirits, or brought upon man as a punishment for his evil deeds. Herein lies the background for many superstitions which have come down to our present day. We find them wearing amulets and all manner of trinkets and badges against all manner of illnesses, and we found them going through weird rituals and trying to extend man made blessing and man made power over these unseen demons.

## CAUSES OF DEATH

Today, many of these fantasies of sickness and cause of death have been dispersed by increased knowledge. Our civilized habits are cleaner. We try to live above dirt and are constantly washing it off. Likewise, we try to live as much as possible away from germs and we are continually washing them off. With all our improvement we still have a high death rate among our infants. The chief causes of this mortality are:

1. Deformities which cannot be prevented and many of which cannot be remedied or cured. Fortunately, this group is very small indeed.

2. We have a considerable group of children crippled and killed by accidents growing out of carelessness on our part. Burning and scalding, falling and automobile crashes make up this great group.

3. We have still another group that are ill or that die due to improper feeding.

4. The greatest of all is that group of babies that are sick and suffer, even die, due to infection by germs. This infection is spread for the most part by contact with other people who harbor these germs, by contact with insects such as mosquitoes, fleas and flies, by wearing clothing infected with germs and by eating food laden with germs.

In considering Group 4 let us first remember that germs are not evil spirits. They are minute plants or vegetables. Our only hatred toward them should lie in the fact that when they infect our bodies we become sick and often die. Likewise, people who are carrying infectious germs are to be helped and cured, if possible, but not despised. Just as firmly we must protect our young children against infection by other people. This is best done by keeping the baby to himself as much as possible until he is older and stronger. This protection cannot be accomplished by the so-called "hardening" by exposure to cold baths and to cold air. This method of torture was used by the less desirable of our savage ancestors for the purpose of infant extinction.

Protection against infection can be approached through proper habits in clothing, in living and in eating.

Every new baby today has the right to expect clean, cotton shirts, diapers and stockings to wear. The bed should contain only cotton material. No silk, wool or feathers should be around a baby. These materials cannot be boiled when they are washed, so cannot be freed of germs. All soiled clothing and bed clothing should be washed in soapy water, rinsed four times in clear water and then boiled from ten to twenty minutes. This habit of clothing and washing prevents many infections in the form of boils, colds and diarrheas in babies.

## CARE OF THE BABY

Along this same line of thought the mother or other attendant on the baby should always wash her hands with soap and water before feeding or caring for the

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baby. Any toy for the baby or older child should be made of material that can be boiled when it becomes dirty or soiled.

The baby's bath should be in clean, warm water in a clean dish pan or foot tub with just enough soap to "break" the water. After the bath the baby should be thoroughly dried with a soft clean cotton towel. No powder should ever be used on a baby's skin unless soreness or galling is present under the diaper or in the wrinkles of the skin. The best powder is a small amount of corn starch or "browned flour," gently patted on with a clean piece of cotton which is thrown away after use and not dipped again into the powder box. Also oils should not be used on the skin except as a direct application to relieve some skin irritation. When oil is used it should be a vegetable oil and should be boiled and cooled and put into a jar or bottle to keep it clean and free from germs.

The mouth, eyes, ears and nose of the baby should be left alone except for external cleaning with plain water. Any interference with these organs should be for some definite reason and then under the specific orders of some good physician.

The baby's room should be as clean and light as possible and the air kept at about 70 degrees. The air should be moist and fresh. Remember, fresh air does not mean cold air. The temperature should be kept as constant as possible, day and night. Many people believe it necessary to have the sleeping rooms cold at nights. Fresh air should be allowed in the room either through opened windows or through the cracks that are already in the room but the temperature should not go below 65 degrees. Many babies get chilled and develop serious illness due to chilling during the night. Breathing extremely cold air irritates the baby's lungs and has a tendency to make the child's temperature go below normal.

If we add to these simple precautions isolation for the baby we have a pretty sane routine. By isolation I mean keeping visitors, especially children, away from the infant. The mother and the fewest possible attendants should be the only persons allowed around the young child until he is three or four months old. The reason for this isolation is to keep the germs from other person's throats out of his nose, mouth and throat until he is older and more able to combat them.

All presents for the baby should be boiled at least ten minutes before being permitted near his person.

In addition to the necessity of cleanliness of surroundings and clothing and the protection against infections from these things and from other human beings we have still another problem of infancy; namely, that of food for the baby.

#### THE BABY'S FOOD

On the first day of life a baby should have one fifteenth his body weight in fluid, preferably sweetened water or breast milk. After that, he needs from one tenth to one eighth the body weight in nutritious fluid every twenty-four hours. If no milk is available the first forty-eight hours, the baby will do fairly well on from 1 to 2 ounces of sugar water that has been boiled ten minutes and cooled to lukewarm, fed every three hours. After forty-eight hours it is necessary to have milk added.

The best milk for all babies is the mother's milk. Babies that are fed upon the breast are not only happier but they are actually stronger and they have fewer diseases. However, if it is impossible to nurse the baby, then added feedings of modified cow's milk or goat's milk are necessary. These feedings to be successful must be given under the direction of a good physician. They will vary with each child and only a well trained doctor is capable of knowing the proper formula for any particular child. All milk and water fed to babies during the first two years of life should be boiled. The

milk should be boiled at least five minutes. All water should be boiled from ten to twenty minutes and fed lukewarm or at room temperature.

At 6 weeks of age the baby needs orange juice, one half ounce in one half ounce of water, sweetened and fed with a spoon once a day. At from 3 to 4 months the baby should have cream of wheat, oatmeal or corn mush, cooked about one hour, fed with boiled milk, warm and sweetened to taste with cane sugar.

At 5 months the baby should have vegetable soup. This should contain chopped lean meat, a chopped carrot, barley or rice and enough water to cook it into a soup. At 10 months the baby should have jello and custard.

At 1 year, bacon and hard boiled, creamed egg yolks should be added. It is well to begin to wean breast babies at about 9 or 10 months. This is done by giving the baby six ounces of boiled skim cow's milk with a teaspoonful or two of sugar in a nursing bottle instead of one of the breast feedings. Another bottle feeding is substituted every two weeks until the baby is entirely off of the breast feedings.

This outline is in no sense meant to be full feeding instructions for any child, but is given as a sort of general idea. It is important to remember that regular feeding time, regular bath time and regular rest time are important in infancy. Until the baby weighs 13 pounds he should be fed every three hours in the daytime and every four hours at night. After that weight is reached he should have five nursings a day at four hour intervals. When other food is given, it should be fed with a spoon just before the breast or bottle feeding and not half way between nursings. The young baby should be held in the arms whether fed from the breast or from the bottle.

The baby under 4 months of age should not be held in the arms, except when being fed, nor rocked in a chair or cradle nor bounced in the bed. These all go to make nervous, irritable children and often lead to vomiting and to digestive upset.

The child under 2 years of age should be protected from flies, mosquitoes, fleas and other insects, many of which carry disease.

Let us consider the vaccination needs of the baby. When the baby is 6 months old, he should be vaccinated against smallpox by your doctor. This should be repeated whenever smallpox is in the neighborhood and again before the child starts to school. By the time he is 1 year old he should be vaccinated against diphtheria. This should be done by your physician. Diphtheria vaccination at 1 year is very important because more children die of diphtheria between 1 and 2 years of age than in any other year of life.

If properly done, vaccination against diphtheria lasts for life. At 2 years of age, your baby should be vaccinated against typhoid fever. Typhoid vaccination should be repeated every two years.

Vaccination against whooping cough is being perfected and, as given today, helps to prevent whooping cough and to make the attacks lighter. Measles can be made mild by giving a treatment for that purpose by your physician.

Do not forget smallpox, diphtheria and typhoid vaccinations! They are positive in their actions and do prevent these dreadful diseases.

In conclusion, let us summarize a few simple rules in caring for our babies:

#### CONCLUSION

1. Keep them in warm, clean, light rooms.
2. Keep the clothing and bed clothing clean by washing and boiling.
3. Keep other people away from babies as much as possible, especially the people who are sick or who have colds and sore throats.



4. Do not handle young babies more than is necessary.
5. Wash your hands with soap and water before feeding or caring for the baby.
6. Feed the baby breast milk if at all possible.
7. All other food except orange juice should be cooked or boiled before feeding it to the infant.
8. Keep the baby's feeding time, bath time and rest time regular and at the same time each day.
9. Take the baby to your doctor once a month until 5 months of age, once every two months until 2 years of age, and consult your doctor every time you think the baby is even just a "little bit sick."
10. Have your doctor vaccinate him against smallpox at 6 months of age; against diphtheria at 1 year of age; and against typhoid fever by the time he is 2 years old.

By following these simple rules we will materially diminish the amount of sickness, the amount of suffering and the number of deaths in our children during the first two years of life.

## CARRIERS OF DISEASE

MAZYCK P. RAVENEL, M.D.

COLUMBIA, MO.

This talk is to inform you of the methods in which diseases are spread.

Every contagious disease comes from some other case or, as we are in the habit of saying, it is "caught" from someone else. Contagious diseases are the chief causes of deaths, especially in the early years of life.

Many disease germs die quickly when they leave the body, especially if exposed to sunlight and quick drying. The exceptions to this rule are germs which form what we call spores which correspond somewhat to the seeds of plants and are extremely resistant to all injurious agencies such as antiseptics, heat, drying, etc. The chief spore forming germ which affects mankind is *tetanus*, known commonly as lockjaw.

Long experience has taught us that the best way to control contagious diseases is to prevent the transmission from the sick to the well. This is done in two ways: (1) By isolating the sick (quarantine), and (2) by keeping well people away from sick ones.

We used to believe that these "catching diseases" were spread by things like clothing, books, bedding or material which was handled by the sick person and then passed on to the well. This may be true for some diseases, especially those due to spore forming germs, but since the days of bacteriology we have learned that the greatest danger to well people is in coming into direct contact with the sick, or with some discharge from the body of the sick person which is taken into the body of the well person through food or drink. There are, however, several important diseases which are not contagious or "catching" such as cancer and diabetes, and the "deficiency" diseases as scurvy, rickets and pellagra which are due to lack of some food element in the diet.

In the majority of the contagious diseases the germs are given off through the secretions of the mouth and nose; for example, measles, scarlet fever, consumption, whooping cough, pneumonia, influenza, common colds, etc.

In the diseases which affect the digestive tract the germs are given off in the discharges of the bowel. The typical example of this is typhoid fever, but it is true also of cholera which fortunately we have not had in this country for nearly fifty years (1892), dysentery and hookworm disease.

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Germs are taken in through the mouth in food, especially that which is not cooked. Cooking is the greatest single hygienic measure which has ever been introduced. The typical diseases taken in by the mouth are typhoid fever, Asiatic cholera, dysentery and undulant fever. The chief agents are drinking water which is polluted by sewage, and milk from diseased cows, although often milk takes up disease germs from those who handle it, especially, for example, from those who have so-called "walking cases" of typhoid fever or those in whose digestive tract the germs persist after recovery, which we call "typhoid carriers." Also scarlet fever, diphtheria, septic sore throat and ordinary sore throat can be carried by milk contaminated by the milkers or later handlers. No doubt a few other diseases are carried in the same way.

Germs are discharged also through the nose as well as the mouth during coughing, sneezing and loud talking. One can prove this by holding a piece of glass in front of the mouth, particularly while sneezing, and see the little particles which are loaded with germs that are thrown against it. This is called "droplet" infection. The nose can and does take in some disease germs, especially when they are distributed in the form of dust; for example, dried and pulverized sputum from a consumptive, and the droplets mentioned. These germs may get into the lung but often pass down the back of the throat and are swallowed, thus reaching the tonsils or the digestive tract and producing disease.

Some of the most important diseases are carried by insects. The ordinary house fly is one of the most dangerous of these. Its eggs are laid in stable manure on which the larva feeds first, but during its entire life it is a scavenger, going on the one hand to filth of all kinds and on the other to the dining table. In fact, in some of our country hotels the flies seem to recognize the dinner bell. Dr. Howard, of Washington, thinks the name of the house fly should be changed to the typhoid fly. Two other flies may be mentioned—the tsetse fly which carries African sleeping sickness, which is fortunately unknown in this country, and the deer fly which transmits tularemia, known in the West as "deer-fly" fever.

Next comes the mosquito, one variety of which, *Anopheles*, is the carrier of chills and fever, or malaria, of which there are at least six million cases in the southern part of our country every year, though it is working its way northward. Another kind of mosquito, *Aedes aegypti*, carries yellow fever which in the past has devastated the cities along our sea coast from the Gulf of Mexico as far north as Philadelphia, and has made large parts of the tropics uninhabitable. You have all heard of the experiences of the Americans in digging the Panama Canal. After the French had failed, owing to the tremendous death rate of engineers, nurses, doctors and workers from yellow fever, an American Army doctor, Major Walter Reed, discovered that a certain mosquito carried the disease, and General Gorgas, another Army doctor, by screening the houses and preventing mosquitoes from breeding as far as possible, made the Isthmus of Panama become almost a health resort.

Certain diseases are carried by animals. Probably the best known is hydrophobia or rabies, the germ of which is found in the saliva of the infected animal and is spread to the human being or to other animals by bites. We have already mentioned that undulant fever is conveyed by milk, but it is also spread by handling the flesh of hogs. It was first discovered in those who were drinking the milk of goats on the Island of Malta, so was at first called Malta fever. It was introduced into this country from that island by goats imported for food and fleece. The germ of Malta fever is closely related to the abortion bacillus which is widely distributed in this country and causes heavy losses in farm

animals. It is the hog variety of this germ that is chiefly responsible for infecting our people. \*

Another disease which has caused much illness and too many deaths is tularemia which is kept alive in this part of the country in the ordinary rabbit. This is a prolonged fever with a slow convalescence although the death rate is not high. This disease is spread from animal to animal and to man by certain ticks, and in the West by the "deer fly." In man probably the majority of cases are spread through wounds on the hands of those handling rabbits, especially in dressing them for market, so it is found largely during the open season for wild rabbits. Dr. Francis, of the Public Health Service, who discovered the disease, advises never to kill and eat a wild rabbit which cannot run fast as those which are loggy are apt to be suffering from the disease.

Another tick carries Texas fever, fortunately not contagious to man, but which affects him seriously economically through losses in cattle and in cutting down food supply by infestation of cattle.

The flea carries bubonic plague which has reached our west and gulf coasts but no interior section, and it never will owing to the protection that is given by our Public Health Service. The rat flea carries the rat type of typhus fever seen in our Southern States, not only from rat to rat but also to man.

The body louse is the regular carrier of epidemic typhus fever (Typhus exanthematicus) although the head louse acts also. A bite from a single infected body or head louse is sufficient to give the disease.

In all cases the biting insect must first have fed on an ill animal or man before it can become capable of transmitting the disease. Insects do not carry disease germs naturally, they must take them up.

Birds sometimes carry highly fatal diseases the best known of which is psittacosis, named from the family of birds which carry it, the parrots, especially the small green parrots known generally as love birds. A number of serious outbreaks have occurred not only in birds imported from South America but also those bred in California and have caused human cases in widely distributed parts of this country.

When all is said, it must be remembered that as far as contagious diseases go, man is man's worst enemy. It is chiefly the diseases of our fellow men, especially those with whom we come into close and prolonged contact as in business offices, schools and in our own families, against which we must protect ourselves.

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## OBITUARY

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W. C. PROUD, M.D.

Dr. Willard Curtis Proud, St. Joseph, died at a St. Joseph hospital the night of April 29 after several months' illness.

Dr. Proud was born June 28, 1873, in Atchison County, Missouri. He was educated in the public schools of Oregon, Missouri. He graduated from Rush Medical College of Chicago in 1899. Following his graduation Dr. Proud located in his home town of Oregon where he was in general practice for thirteen years. He then took postgraduate work at Tulane University in New Orleans, at the New York City Eye, Ear, Nose and Throat Hospital and attended clinics in Vienna and London. In 1915 he located in St. Joseph as an eye, ear, nose and throat specialist and had taken care of a large clientele up until the time of his ill health.

Dr. Proud was a fellow of the American College of Surgeons, a member and past president of the Kansas City Eye, Ear, Nose and Throat Society, a member and past president of the Buchanan County Medical Society

and a member of the Missouri State Medical Association. He was a member of the First Methodist Church and of Moila Temple. He was on the staff of the Missouri Methodist and the St. Joseph's hospitals. He gave of his time freely as a surgeon of the medical staff of the Welfare Board.

Dr. Proud was an influential citizen of his community. As a general practitioner and later as an ophthalmologist he developed a large acquaintance in the St. Joseph territory. He was a man of intense vigor and optimism. He valued friendship highly and the loss of his companionship will be keenly felt. He was highly respected by the members of the Buchanan County Medical Society for his skill as a physician and his character as a man. He was a good husband and father and at the time of his death was educating a son to follow in his steps as a physician. Therefore be it

*Resolved*, That the Buchanan County Medical Society tender our sympathies to the bereaved members of his family and that a copy of this resolution be placed on the permanent records of this Society.

W. ROGER MOORE, M.D.  
H. W. CARLE, M.D.  
OWEN W. D. CRAIG, M.D.

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## JOSEPH WALTER MILLS, M.D.

Dr. Joseph W. Mills, Owensville, a graduate of the National University of Arts and Sciences, St. Louis, 1913, died at the Missouri Baptist Hospital in St. Louis March 1 following an operation. He was 56 years old.

Dr. Mills was born in Lebanon, Marion County, Kentucky, and received his early education there. After completing his medical studies he practiced in St. Louis, Houstonia, New Haven and for the last ten years had been located at Owensville.

Dr. Mills was active in civic and county affairs. He was health officer of Gasconade County and a member of the City Board of Health.

He is survived by his widow, Mrs. Anna B. Mills.

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## WILLIAM GARFIELD HENDERSON, M.D.

Dr. William G. Henderson, Cuba, a graduate of the University of Louisville School of Medicine, Louisville, Kentucky, 1912, died suddenly April 19 of a coronary thrombosis. Death came to him while in his car at 3 a. m. nearing a home where he was to attend a confinement.

He began practice at Oak Hill in Crawford County in 1913 and moved to Cuba in 1925. He had practiced in Crawford County for twenty-five years.

He took a number of postgraduate courses during his quarter century of practice. He was a hard and conscientious worker and was considered one of the most thorough and efficient general practitioners in the country.

He served as coroner of Crawford County from 1925 to 1929.

He was an Odd Fellow, a Thirty-Second Degree Mason and a Shriner.

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## BOOKS FOR LEISURE MOMENTS

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### GLANDULAE PARATHYREOIDEAE

A few months since it was our pleasure to review in these columns Langerhans' original description of the pancreatic islets. The opinion was expressed that republication of similar little known but momentous contributions would prove valuable additions to the literature. The Johns Hopkins Press in Baltimore in adding to its list of medical incunabula the present volume



"On a New Gland in Man and Several Animals," by Ivar Sandstrom, details the discovery of the parathyroid glands.

It is almost inconceivable that as late as 1877 any part of the gross anatomy of the body could have remained undiscovered. Nevertheless, while still a medical student, Sandstrom discovered in the neck of a dog a bit of tissue which was not known to his professors. A few years later he made comparative studies on the existence of this gland in several animals and in man. "... on account of the fact that this kind of gland is constant in its occurrence . . . I therefore suggest the use of the name *Glandulae Parathreoideae*; a name in which the characteristic of being by-glands to the thyroid is expressed."

The medical man is likely to feel something of reverence for those early investigators who founded modern medicine. That he might approach his art in the spirit of its historical greatness and with due regard for the solid basis upon which it stands it might be wished that the reading of their original papers were a requirement of the medical curriculum, which unfortunately is already overcrowded. The individual must seek out these separate bits of fundamental research which in the telling mirror the personality of their author far more than the factual modern contributions. More likely they will be lost to the mass of physicians unless the Johns Hopkins Press continues the splendid work that it has begun.

B. Y. G.

#### THE COUNTRY'S INCOME

It is an axiom of the physician that fees must be adjusted to the income of the patient. Maurice Leven in "The Income Structure of the United States" (The Brookings Institute, Washington, D. C.) makes clear how much and how often such reductions must be made. His study embraces, too, the income of physicians. Strangely enough, those practicing in communities with a population between 25,000 and 50,000 average somewhat higher earnings than those practicing in communities of other size.

Taking his material from countless sources, carefully evaluating it, codifying it, constructing amazingly simple but revealing charts, Leven adds to the mass of factual data which throws light on the American income. Countless factors tend to modify it, some of them unpredictable, some of them operating in accordance with simple economic law. If the medical profession is today faced with any difficulty of a financial nature these pages make it easy to understand the reason, more especially for the period since 1929.

Of 7436 families living in 1929 in eight representative cities 88 per cent had an annual income of less than \$3000; by 1932, of these families 97.5 per cent had an annual income of less than \$3000. For the country as a whole 92 per cent of the individuals and 79 per cent of the families earned less than this amount in the year of the great bonanza. Another view of the income of the workingman is afforded by the median income (that is the figure to either side of which the earnings of half the employed group may be placed) of a group of employed workers in the larger Michigan communities in 1934. This median figure which relates only to employed workers is \$980.

A few figures which pertain only to physicians follow. The greatest average annual income is achieved in the period between fifteen and twenty years after beginning practice. The median in this instance (1928) was about \$5700. The income of the physician earning \$5000 in 1929 had shrunk to less than \$3600 by 1936.

This is a book which deserves the thorough study of any person who might contemplate a change in the form of medical practice.

B. Y. G.

#### MEDICAL HISTORY MADE ALIVE

The Englishman of two centuries ago must have been a very hearty person. That he could survive the frequent bleedings, sometimes as much as a quart at one sitting, and the drastic purges prescribed almost daily by his physicians is to be marveled over. That he could attain the strength to survive these drastic treatments on a diet almost devoid of fruits and vegetables may be a tribute to the almost exclusive meat diet which seems to have been his chief sustenance. And that he could overcome the debilitating inroads of "laudable pus" and recover at all must serve as evidence of the skill of his physicians.

Ernest Gray of Muswell Hill, London, writes that through some good fortune the diary of an eighteenth century physician came into his hands. He has edited that portion dealing with this physician's preparation for the practice of medicine and his year as surgeon in his majesty's navy. "The Diary of a Surgeon in the Year 1751-1752" by John Knyveton (D. Appleton-Century Co., New York) is a fascinating survey of the medical and social practices of nearly two centuries ago.

The microscope was just being introduced but only those students who so desired took a course in microscopy. The time so spent was used to gaze at the animaculæ to be scooped out of stagnant ponds and the like. It was rarely suspected that this instrument held the key to the plagues which more than decimated the populations of that period. Even Knyveton gives no indication that it might eventually uncover the mystery of the dread yellow fever although he spent some weeks on an isolated island caring for inhabitants and native blacks stricken by the "miasma" arising from the adjacent swamps.

The study of anatomy constituted the chief preparation for the practice of medicine. The grave robbing expeditions, through which cadavers for dissection were obtained, are faithfully portrayed. A fight between rival groups of students who used bone and muscle preparations as weapons supplies a diverting episode in the narrative. Even the occasion of a great banquet presided over by the immortal Samuel Jonson merits the careful description of the author.

Here is a volume to be unhesitatingly recommended to any one desiring a first hand view of medical custom two centuries ago. One of the pleasing aspects of the publication is the nine plates, reproductions of contemporary prints.

B. Y. G.

#### PRISON DOCTOR

There is no lack of patients in certain physicians' offices in this country. Not only are there plenty of old patients but there is a constant succession of new ones. They do not pay him; still he does not worry about "collections." He has a plentiful staff of assistants, chosen from the population of his community. The positions he has to offer are eagerly sought after by his erstwhile patients since they carry with them certain privileges. For no matter how vicious a man might be on the outside, he still takes pleasure in serving his fellows. These are some of the impressions which Dr. Patrick H. Weeks, physician and psychiatrist to the Indiana State Prison, records in his book "The Big House of Mystery" (Dorrance and Company, Philadelphia).

The routine followed by prison inmates is calculated to keep penitentiaries from being overcrowded. The account of interviews with the parole board is more interesting than much of the book. Here the author has caught the spirit of the men, presents them as they are and tells enough about them to be satisfying to the reader. There is a succession of sketchy case histories. In less than a page Dr. Weeks seeks to tell what has

placed these men where they are, made them into the kind of men who must be locked up. In common with the usual writer of prison books he believes that it is the accidental circumstances of a moment that lead to the prison gate. Sometimes overpowering passion, or love of a bad woman or of a good one, or infuriated anger brought on even by a trifle leads men to commit criminal acts.

The career of John Dillinger, which will probably be echoed in popular magazines for years to come, is a commonplace, uneventful story of a quiet, unassuming boy who went bad, who developed such strong gang loyalties that nothing could prevent him from doing all that was possible to aid his friends. They in turn were equally devoted to their leader. But the story is as barren as it appears in these pages.

Withal, the volume affords some insight into the life of a prison physician. It is entirely factual. In that, perhaps, is to be found the reason that it is less absorbing.

B. Y. G.

#### JOHN AND MARY AND THE GENITO- INFECTIOUS DISEASES

In the Scandinavian countries the incidence of genito-infectious diseases declined approximately 90 per cent in the years between 1919 and 1933. The number of new syphilitic infections in Sweden in the latter year was only 7 per 100,000 inhabitants. This figure is to be contrasted with an annual attack rate of 400 per 100,000 inhabitants in the United States. The conclusion is obvious. Something is being done; something more must be done. In Northwestern Europe the people have an inbred respect for law; force is not required to see to it that they continue under treatment should they acquire a venereal disease. Letters alone seem sufficient to bring the recalcitrant syphilitic patient back to his physician. The statutes covering the venereal diseases in the Scandinavian countries are quite similar to those in this country. The citizen of the United States is generally considered to hold the law in some disrespect. Hence force, always undesirable in dealing with human beings, becomes necessary if the infected are to be treated until they are rendered noninfectious. Education would prove a better weapon.

Disregard for law is not the only factor that is responsible for the fact that over 5 per cent of white Americans and 18 per cent of colored Americans have syphilis. The moral taboos that surround the sexual relationship plus the prudery of the average citizen leads some to conceal their disease. They know the price of public opprobrium. They are ignorant of the final ravages of the disease. They prefer to dismiss their infections and to assume that the absence of acute symptoms means that they have no disease. John and Mary may give to each other a crippling germ acquired in venery or in innocence.

Dr. Nels A. Nelson, Director of the Division of Genito-infectious Diseases of the Massachusetts Department of Health, and Gladys L. Crain, Epidemiologist of the Division, present these concepts as part of a full discussion on "Syphilis, Gonorrhea and The Public Health" (The Macmillan Company, New York). The term, venereal, is still distasteful to many. These diseases should be discussed as freely and as impersonally as smallpox and typhoid fever. To remove the taint of the term, genito-infectious diseases is suggested to include those illnesses generally believed to arise out of illicit sexual contacts. Whether it is the best term that might be used it will at least be a relief to get away from venereal and the unwholesome connotation that it sometimes carries.

In orderly fashion the subjects of syphilis, gonorrhea, chancreoid, granuloma inguinale and lymphogranuloma inguinale are covered. Their bacteriology as well as their pathology and treatment are included. In succeed-

ing sections of the book the statistical incidence of these diseases and the matter of their control and relatively negligible costs are considered. The final section of the volume is given over to the Scandinavian example.

The criticism that is so often directed toward books of this class might again be offered in regard to the task set themselves by the authors. It seems doubtful whether as many different groups of the population will be attracted to this book as is the hope of the authors. That health officers and physicians will be interested goes without question for the general style of the book is such as to merit their interest. That nurses, social workers and public health workers in general, as well as that part of the general public which is interested in the control program will be interested is doubtful. In general the volume may prove too technical for them. The tremendous impetus which has been given to the whole problem through the activities of Surgeon General Parran might be better fostered for the latter group were a separate volume to be written for them.

Despite the opinion offered in the preceding paragraph it cannot be doubted that the welfare of the nation will best be served by wide dissemination of the numerous books in this field that have recently been published. All of them are performing a socially useful and desirable task. Each of them will contribute toward a better understanding of the problem, toward an effective campaign for the eradication of those diseases acquired sometimes in the act of meeting certain very human needs.

B. Y. G.

#### THE NATURE OF THE BLEEDING IN JAUNDICE

Armand J. Quick, Milwaukee (Journal A. M. A., May 14, 1938), presents experimental observations made in studying the coagulation of blood which furnish significant information on the nature of cholemic bleeding and offer practical suggestions for the management of the jaundiced patient. Irrespective of the cause of jaundice, it is of primary importance to know whether impairment of hepatic function has occurred. Unless an operation is extremely urgent, the patient should be given the benefit of special preoperative treatment with the aim of improving the function of the liver. The use of dextrose is well recognized and the administration of gelatin is advocated because of its high content of aminoacetic acid. Vitamin therapy is still to some extent empiric. In the prophylaxis against postoperative bleeding, the concentration of prothrombin should be closely followed both before and after the operation. The direct determination of prothrombin offers the advantage of being quantitative and a good prognostic guide in combating hemorrhage. If a prothrombin deficiency is found, efforts should immediately be made to restore the level of this clotting factor to a point that assures normal clotting. Should the patient's history suggest a possible vitamin K deficiency, the administration of this food factor either in the form of powdered alfalfa leaf or as an extract prepared by the method of Almquist is indicated. One should also administer bile, bile acids or desoxycholic acid to assist in the absorption not only of vitamin K but of vitamins A and D as well. If injury to the liver is present, dextrose, gelatin or aminoacetic acid, calcium and viosterol are the chief therapeutic agents available. If the prothrombin concentration of the blood is below 15 per cent the only prompt and effective treatment is transfusion. This treatment is of only temporary benefit. As long as the patient's prothrombin is kept above the bleeding level, the danger of serious hemorrhage is abated and this allows time for trying various therapeutic means and agents for restoring the body's power to produce prothrombin. A vitamin K deficiency as a cause of hemorrhage has not been demonstrated clinically, but it is probable that it may be a cause of bleeding in man.



## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.  
Perry County Medical Society, December 4, 1937.  
Ste. Genevieve County Medical Society, December 14, 1937.  
Camden County Medical Society, January 7, 1938.  
Webster County Medical Society, January 7, 1938.  
Montgomery County Medical Society, January 14, 1938.  
Dent County Medical Society, January 21, 1938.  
Miller County Medical Society, February 8, 1938.  
Moniteau County Medical Society, March 11, 1938.

ASSOCIATE EDITORS: COUNCILORS OF THE  
TEN COUNCILOR DISTRICTS

#### FIFTH COUNCILOR DISTRICT

WILLIAM A. BLOOM, FAYETTE, COUNCILOR

##### Howard County Medical Society

The Howard County Medical Society met at the Lee Hospital, Fayette, at 8 p. m. on April 25 with the vice president, Dr. W. M. Dickerson, Armstrong, presiding. All active members except Dr. William B. Kitchen, Glasgow, were present. Four guests were present.

Dr. Dudley S. Conley, Columbia, gave a brief talk in which he urged attendance at the coming State Association Annual Session in Jefferson City.

Dr. M. Pinson Neal, Columbia, explained the function of the new Council and compared it to the old executive committee. He discussed some of the proposed amendments to the Constitution and By-Laws.

Brief talks were made by Dr. William A. Bloom, Fayette, Vice President of the Association, and by Drs. Asa Barnes and M. L. Gentry, of the State Board of Health, who are helping to establish a district health unit.

After a general discussion of the proposed medical care of clients of the Farm Security Administration, the Society decided to reject sponsorship of this project.

WILLIAM J. SHAW, M.D., Secretary.

#### SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

##### Lafayette County Medical Society

The Lafayette County Medical Society met in Higginsville on April 26.

An open forum discussion of matters pertaining to the Missouri State Medical Association Annual Session was held with Dr. C. T. Ryland, Lexington, delegate from the Society.

Dr. Asa Barnes, chief public health officer of the district, explained briefly the function and plans of his department.

Dr. M. L. Gentry, Higginsville, associate public health officer, was elected to membership.

Drs. L. J. Schofield, O. B. Hall, E. R. Cooper and T. J. Draper, Warrensburg, were guests of the Society.

After the business session the Society adjourned for refreshments as guests of the Higginsville members.

E. S. WALLACE, M.D., Secretary.

#### Vernon-Cedar County Medical Society

The Vernon-Cedar County Medical Society met in the library of the Nevada Hospital, Nevada, April 28. Dr. J. S. Newlon, Nevada, president, called the meeting to order at 7:45 p. m.

Dr. George H. Thiele, Kansas City, gave an interesting and practical illustrated lecture on "Common Disorders of the Rectum."

Following a brief business meeting the Society adjourned.

Present at the meeting were Dr. George H. Thiele, Kansas City; Drs. H. W. Lancaster, E. H. Liston, J. S. Newlon, R. W. Pearse, T. B. Todd, R. B. Wray, A. S. Miller, Nevada; C. B. Davis, Walker; R. H. Smith, Rich Hill, and C. W. Luter, Butler.

R. W. PEARSE, M.D., Secretary.

#### EIGHTH COUNCILOR DISTRICT

H. L. KERR, CRANE, COUNCILOR

##### Greene County Medical Society

The Greene County Medical Society held a special meeting at the Burge Hospital, Springfield, March 31. The purposes of the meeting were:

1. To establish a permanent meeting place for the Society. The Shrine Mosque, St. Paul's Methodist Church and the Public Library were discussed. Dr. H. A. Lowe, Springfield, moved that the Shrine Mosque be made the permanent meeting place and the motion was seconded by Dr. W. S. Sewell, Springfield, and carried by a unanimous vote. The president appointed Dr. Lowe to make the necessary arrangements for obtaining the use of the Shrine Mosque for meetings on the fourth Friday of each month. A discussion followed on the advisability of continuing dinners preceding meetings. It was decided to abandon this except on special occasions.

2. To discuss the formation of a tumor clinic in Greene County. Dr. Paul F. Cole, a member of the Cancer Commission, briefly outlined the work done by this Commission and interpreted the law as adopted by the last legislature in regard to the formation of tumor clinics over the state. St. Louis, Kansas City and St. Joseph have requested the Cancer Commission to establish tumor clinics. Springfield, being the fourth city in size, should be the next to act in this regard. The clinics are established only in counties that have requested the Cancer Commission through the medical society to form such a clinic. Drs. E. M. Fessenden, F. T. H'Doubler, W. C. Cheek, W. S. Sewell and R. L. Russell, Springfield, went on record as being heartily in favor of the tumor clinic for indigent cancer patients. They also commended the Cancer Commission highly for its procedure in carrying out their program through the medical societies. The Society voted unanimously to petition the Cancer Commission to establish a tumor

clinic in Greene County and directed the secretary to request the same by letter to Dr. Cole as a member of the Commission. Dr. Cole suggested that the Society appoint a committee to act in behalf of the Society and meet with the Commission in the near future. Dr. Urban J. Busiek moved that the committee represent the three hospitals. The president appointed Dr. H. A. Lowe of the Burge Hospital staff, Dr. F. T. H'Doubler of the St. John's Hospital staff and Dr. C. E. Feller of the Springfield Baptist Hospital staff to serve on the committee.

3. A motion by Dr. W. S. Sewell that any member 70 years of age or disabled be elected to honor membership on request carried.

4. A letter in regard to the Annual Session was read from Dr. Dudley S. Conley, Columbia.

5. Dr. Urban J. Busiek asked for a report on the refresher course in pediatrics given recently by Dr. O. F. Bradford that a report might be made to the Pediatrics Society. It was reported that the meetings were poorly attended but excellent in type.

The following members were present: Drs. A. W. Gifford, J. L. Johnston, W. S. Sewell, A. D. Vail, H. L. Hoover, W. C. Cheek, P. F. Cole, Urban J. Busiek, F. T. H'Doubler, J. F. Leslie, J. E. Dewey, H. A. Lowe, W. R. Beatie, E. M. Fessenden, J. D. Horton, M. L. Napier, A. D. Knabb, M. C. Stone, G. M. Powell, D. L. Yancey, D. G. Hall, W. E. Handley, R. L. Russell and L. F. Heimburger, Springfield.

J. L. JOHNSTON, M.D., Secretary.

#### TENTH COUNCILOR DISTRICT

E. J. NIENSTEDT, SIKESTON, COUNCILOR

##### Perry County Medical Society

The Perry County Medical Society was called to order by the president, Dr. J. J. Bredall, Perryville, at 8:15 p. m. April 13 at Dr. Bredall's office.

A health program of lectures on maternal welfare and venereal disease was planned. The various doctors of Perryville are to cooperate in giving these lectures which will be given in most of the towns of Perry County. A lecture is scheduled for Perryville on April 25 to be given by Dr. E. M. Bryan, Farmington.

The secretary was requested to have the recently received duplicate charter of the Perry County Medical Society framed. The original charter of 1915 had been misplaced during the several years the Society was inactive.

A letter was read regarding the Annual Session at Jefferson City.

A motion picture film on "Syphilis" was presented and was of much interest.

Dr. E. M. Bryan, Farmington, gave a short discussion on "Syphilis."

Members present were: Drs. J. J. Bredall, O. A. Carron and B. T. Koon, Perryville; visitors were Drs. E. M. Bryan, Farmington; Theodore Fischer, Altenburg, and W. H. Barks, Perryville.

O. A. CARRON, M.D., Secretary.

#### St. Francois-Iron-Madison-Washington-Reynolds County Medical Society

The St. Francois-Iron-Madison-Washington-Reynolds County Medical Society met on April 29.

Officers were elected as follow: President, Dr. C. H. Appleberry, Flat River; vice president, Dr. J. L. Thurman, Potosi; secretary and treasurer, Dr. P. L. Jones, Flat River.

P. L. JONES, M.D., Secretary.

## BOOK REVIEWS

**SENILE CATARACT.** Methods of Operating. By W. A. Fisher, M.D., F.A.C.S., Chicago, Illinois. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College, etc. One hundred and fifty pages and 181 illustrations. Chicago: The H. G. Adair Printing Co. 1937.

W. A. Fisher, M.D., has revised his third edition on senile cataracts. The new material in this edition is a record of further operations that Dr. Fisher and his associate have done; otherwise the book is the same as the previous edition. A. W. M.

**THE CEREBROSPINAL FLUID.** By H. Houston Merritt, M.D., Assistant Professor of Neurology, Harvard Medical School, etc., and Frank Fremont-Smith, M.D., Formerly Assistant Professor of Neuropathology, Harvard Medical School. With a Foreword by James B. Ayer, M.D. Illustrated. Philadelphia and London: W. B. Saunders Company. 1937. Price \$5.00.

One cannot fail to be impressed on examining this book with the large amount of original investigation made by the authors. They have examined spinal fluids of every kind of neuropsychiatric condition including a great many which some might not think it necessary to examine.

There are chapters on the chemistry of the cerebrospinal fluid under normal and pathological conditions, the technic of lumbar and cisterna puncture and encephalography, and the therapeutic use of lumbar puncture.

The authors give a wealth of information on the condition of the fluid in various diseases, how to correct for contamination by blood, etc., all arranged so as to be easily used in connection with an actual case under consideration. The importance of not depending upon a single examination is emphasized.

All in all this is a valuable and practical book for anyone who has to interpret spinal fluid findings, and this means most of us. B. L. E.

**PNEUMONIA AND SERUM THERAPY.** By Frederick T. Lord, M.D., Clinical Professor of Medicine, Emeritus, Harvard Medical School, etc., and Roderick Heffron, M.D., Field Director, Pneumonia Study and Service, Massachusetts Department of Public Health, 1931-1935. Revised edition of Lobar Pneumonia and Serum Therapy. New York: The Commonwealth Fund. London: Humphry Milford: Oxford University Press. 1938. Price \$1.00.

This book was first published in 1936 by the Commonwealth Fund under the title "Lobar Pneumonia and Serum Therapy." The present edition includes additional data particularly with regard to dosage, the use of antiserum and the results of specific treatment of types I, II, VII, VIII and XIV pneumonia.

The authors discuss the subject in ten short chapters, six of which deal with the application of serum in the treatment of pneumonia. Of special interest to every practitioner of medicine is the chapter dealing with the precautions to be taken prior to serum administration, the chapter which discusses the administration of serum and dosage and the one which treats the subject of serum reactions and their treatment.

The value of serum treatment is convincingly brought out in the tables and figures dealing with the results of serum treatment.

The recent advances made in the etiology and in the diagnosis of pneumonia are well covered.



The section which deals with the public health control of pneumonia is timely and for this reason this book will not only be of interest to the general practitioner and the chest specialist but also to public health officials.

The booklet, which covers 130 pages, is well written and reads easily.

The reviewer has no hesitancy in recommending this fine booklet to the profession.

H. I. S.

**A TEXTBOOK OF HEMATOLOGY.** By William Magner, M.D., D.P.H., Pathologist, Saint Michael's Hospital, Toronto, Canada; Lecturer in Pathology, University College, Cork, Ireland. Philadelphia: P. Blakiston's Son & Co., Inc. 1938. Price \$4.50.

This book was written to present the subject of hematology in a manner acceptable to practicing physicians, so states the author. We believe that he has carried out his plan very well. The keynote of this book is descriptive and not pictorial. There are only three color plates and twenty-three photomicrographs, thus differing from most of the recent books on hematology which have been characterized by abundant illustrations.

So far as interpretation of the blood picture is concerned the most explicit and informative facts are given in this book of any text published on the subject of hematology since Schilling's masterpiece. The author does not quibble about terms, rather does he acknowledge differences of opinion and cites the most commonly used names. The book represents a fair-minded résumé of the most important points in the literature of modern hematology.

In the section on leukocytes the writer follows the plan of giving the blood picture followed by interpretation of findings instead of giving a category of diseases followed by an expression of what might be expected in the blood in these conditions. The sections on anemia and leukemia are good but are out of proportion to the section on infection so far as the importance is concerned in that they are too long whereas the latter is too short.

The chapter on technic is not sufficiently authoritative for the instruction of technicians but is sufficient for practical purposes of physicians.

Attention must be called to the fact that the remarks on the physiology of blood formation and destruction are especially good.

R. B. H. G.

**SYMPTOMS OF VISCERAL DISEASE.** A Study of the Vegetative Nervous System in Its Relationship to Clinical Medicine. By Francis Marion Pottenger, A.M., M.D., LL.D., F.A.C.P., Medical Director, Pottenger Sanatorium and Clinic for Diseases of the Chest, Monrovia, California; Professor of Clinical Medicine, University of Southern California, etc. Fifth edition. With eighty-seven text illustrations and ten color plates. St. Louis: The C. V. Mosby Company. 1938. Price \$5.00.

The author's contributions to the subject of physiologic medicine are well known. In this book he succeeds admirably in clarifying the functions of the vegetative nervous system. His foundations are firmly established and, as a master clinician, he maintains a clear vision of the diagnostic and therapeutic significance of the complex mechanism which he so vividly describes.

Every earnest student of medicine who wishes to comprehend the underlying causes of the symptomatology of disease should read this book. It will interest not only the neurologist and internist but all of the specialists in medicine from the ophthalmologist to the proctologist, not omitting the allergist, endocrinologist

and dermatologist. The chapter on visceral pain deserves special commendation. The style is clear and concise.

The whole book is a splendid example of the printers' art and the illustrations are unsurpassed in beauty, clearness and accuracy.

H. W. S.

**THE OCULAR FUNDUS IN DIAGNOSIS AND TREATMENT.** By Donald T. Atkinson, M.D., F.A.C.S., Consulting Ophthalmologist to the Santa Rosa Infirmary and the Nix Hospital, San Antonio, Texas, etc. With 106 illustrations including fifty-eight colored plates. Philadelphia: Lea & Febiger. 1937. Price \$10.00.

This book is unique in that Dr. Atkinson has made all of his fundus drawings. It is quite complete on medical ophthalmology and is the only new work in English on this subject during the last ten years. It is well written and beautifully illustrated.

A. W. M.

**A BIOLOGICAL APPROACH TO THE PROBLEM OF ABNORMAL BEHAVIOR.** By Milton Harrington, M.D., Psychiatrist, Institution for Male Defective Delinquents, Napanoch, N. Y., Formerly Consultant in Mental Hygiene, Dartmouth College. Lancaster, Pa.: The Science Press Printing Co. 1938.

The title, in a general way, conveys the idea of what we might anticipate in the text. The book is well written and subdivided into thirty-two chapters. Part one discusses briefly the principles of psychology, part two psychophysiology and part three psychopathology. It may be read with possible interest and profit by physicians, medical students, nurses, social service workers and psychologists.

There appears a suggestion at several points in the book that in the future another volume may be expected and entitled "Psychoorthology."

Possibly one would be doing the writer an injustice by classifying the work as playing the role of propaganda in behalf of the author's own ideas, conceptions, theories and laws relative to the mechanistics of behaviors of the mind, both normal and abnormal. There is at least a good attempt in an endeavor to approach both normal and abnormal mental activities. Reference is made to "the old fashioned Kraepelinian psychiatry." The competitive schools of Freud, Adler and Jung are discussed on several occasions. He combats vigorously some of the present day psychoanalytic trends, especially as evidenced in the United States. While admitting some of the research values, he is generally decidedly antagonistic to the Freudian method of psychoanalysis. He stresses the biomechanistic constantly; yet at times finds it convenient to deviate definitely from this theme. There is criticism of Adolph Meyer in that he does not follow through for all of his biological theories in his psychobiology. Our author does not make a clear differentiation between the old and the new psychology. In chapter five under the "The Mechanism of Behavior" he draws freely on neuroanatomy and neurophysiology admitting the advantage of the neurone conception to develop his own mechanistic theories. The book considers behavior as initiated by external and internal stimuli. His explanation and differentiation of physical and visceral pain may not be adequate and up-to-date, especially in view of our many recent discoveries relative to the autonomic and vegetative nervous systems. Much stress is laid on the term of nervous tension, especially in explaining pathologic deviations and for the therapeutic procedures. Tension mechanisms have been divided into pain, anger and laughter. He concluded that mental ills are due to bad heredity, faulty education and somatic diseases; that the cure rests on proper breeding, education and training, preserving bodily health and environment.

A. L. S.

# THE JOURNAL

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### MISSOURI STATE CANCER HOSPITAL

ITS RELATION TO MEDICAL PRACTICE

PAUL F. COLE, M.D.

SPRINGFIELD, MO.

I am speaking not for the Missouri State Cancer Commission but only as an individual member of that body. My purpose is to bring to the attention of the Association briefly some matters relative to the Missouri State Cancer Hospital, especially its relation to the medical profession.

The last session of the state legislature enacted a law for the establishment of a State Cancer Hospital with provision for its maintenance. The Governor duly appointed a Cancer Commission. The Commission employed architects who have drawn the necessary plans which have been approved by the Commission. Columbia provided, by donation, a suitable site and competitive bids on the building will be received and the contract let in the near future.

These facts preclude any further discussion as to whether or not the State of Missouri is to have a Cancer Hospital erected and maintained at the expense of the state for now we have it. The question uppermost in the minds of all is how best to maintain and administer it; that is, to operate the institution to serve the indigent cancer patients with modern methods of treatment, doing justice alike to the afflicted citizen and the medical profession. To assure success of the cancer program our Governor made, I think, a wise decision when he determined to place full responsibility for the successful operation of the new institution in the hands of the medical profession.

The death rate from cancerous disease, as reported from time to time by statisticians, is somewhat startling.

The well informed medical practitioner with all that modern medicine has to offer finds many problems in cancer work difficult of solution. It may be said that the frontier is still open and as difficult as ever.

Literature for lay consumption is being sent throughout the nation stating that cancer is reducible; to quote literally, from 30 to 50 per cent when the public and medical profession both take full advantage of the known facts concerning cancer. There seems reason to suspect that the statement would come nearer conveying the truth if it had been preceded by the modifying adjective "probably."

The cancer problem to the layman has always been and undoubtedly will continue to be a matter of cure; to the medical profession with our present knowledge it is becoming more and more a matter of control made possible by early discovery.

Practically every practitioner working with cancer patients is disposed to place the blame for his failures of cure on somebody else. It is at this point, if you will pardon the expression, "where passing the buck," begins. For instance, the surgeon who sees a patient with a cancer of the lip where insufficient radiation has been used is convinced that the radiologists are standing in the way of progress in cancer therapy; and the mechanism of the idea works just as efficiently in reverse.

Every radiologist sooner or later meets with the bold surgeon who attacks every case of inoperable carcinoma with which he comes in contact, and the radiologist easily persuades himself to entertain an intolerant opinion about surgery. Again both the surgeon and the radiologist point frequently to the general practitioner as the offender and in some instances the fault is his. Again we have the surgeon, radiologist and general practitioner forming an entangling alliance and placing the full blame on the patient himself because he does not come earlier for treatment. I desire indulgence and advice on the question of disentangling the entangling alliance.

What is the attitude of the average patient? In most instances he first consults a friend and the chances are about five to one that the advice will be based on some quack remedy heard of over a radio broadcast or through mail advertising. The answer is, "Fight cancer with knowledge."

But now, thanks to a generous legislature working under the guidance of a progressive and



humanitarian Governor, a state wide cancer program is rapidly taking form.

Throughout the nation come notes of inquiry and letters of congratulations to Dr. Ellis Fischel, Chairman of the State Cancer Commission, for the forward step Missouri has taken in the war on cancer.

The state law provides for a State Cancer Hospital for treatment of cancer and allied diseases and for the Governor to appoint a Cancer Commission. The Commission is empowered to select a site to build, operate and maintain the hospital, to employ an administrator and staff including nurses and such other personnel as they deem advisable and necessary. The hospital shall conform in all respects with the rules and requirements of the American College of Surgeons including the necessary radium and roentgenographic equipment for the best treatment of patients afflicted with malignant disease.

The Cancer Commission is to make all necessary rules and regulations for the conduct and discipline of the Cancer Hospital. The hospital is to be designed primarily and principally for the care and treatment of indigent persons afflicted with cancer. Patients admitted to this hospital must be legal residents of Missouri unable financially to secure such care otherwise. The intention of the law is to limit the work in this institution to indigent cancer patients of Missouri.

Section 13 of the law reads: "The Cancer Commission of the State of Missouri is empowered and directed to establish cancer clinics in the larger cities of the state on request of the local medical societies. All clinics are to be administered by committees appointed by the local medical organizations (county medical societies), these committees to have charge of the administrative details connected with their respective clinics but in all cases they must conform with the minimum standards set by the Cancer Commission of the State of Missouri. The minimum standards of the Commission are:

"(a) The group diagnosis must consist of at least three men, preferably a surgeon, a radiologist and a pathologist. When any of these is not available other physicians may be substituted.

"(b) It being essential that exact information along certain lines be furnished to facilitate and make certain investigations and aid in the treatment of cancer, therefore, all information requested by or sent to the State Cancer Commission shall be on forms furnished by the Cancer Commission to the end that the various local state clinics and practicing physicians and the State Cancer Commission have uniform records giving the information of each case treated.

"(c) Under the direction of the State Cancer Commission, a person trained in the work of following up each case of cancer and precancer shall be employed in connection with the work of local clinics to the end that protection of proper skilled care and treatment is extended each patient at all times and a uniform record of each case be kept.

"The State Cancer Commission shall furnish money to defray the expenses of the skilled person engaged in this follow-up service to the patient or said commission may furnish the local clinic with the part time service of such a person so skilled in follow-up service if the Commission deems such part time service adequate."

You will note there is no provision for reimbursing the examining physicians for their services in the tumor clinics established under this section. I might add that such a cancer clinic, under the direction of the Greene County Medical Society, was organized a short time ago in Springfield. Fifteen per cent of the patients attending showed small warts, moles and keratoses which we might classify as precancerous conditions and which are easily and successfully treated by local physicians for a small fee. Twenty-three per cent of the patients showed definite evidence of cancer and were referred to the State Cancer Hospital. Thirty-two per cent complained of being ill but showed no evidence of cancer. Thirty per cent were healthy; not ill but cancer minded.

The means or methods used in determining indigency of applicants is, I believe, of great importance to the medical profession. The plan of admission proposed at the present time is similar to that used in our state eleemosynary institutions which is an affidavit from the attending physician and the county court in the county where the patient resides. Personally I am somewhat hesitant as to the advisability of such a simple procedure where a state wide educational campaign for cancer control is to be carried out, perhaps conducted in some instances by lay organizations or free lance social workers. A recent report on the old age pension status in Missouri demonstrates the efficiency of case workers with affidavits in hand.

The Cancer Commission should study carefully the work and results of other commissions in our state dealing with the indigent patients and avoid the path of least resistance where the blind lead the blind. Let us try to foresee the fly in the ointment.

In closing I wish to state that in my opinion it is not a duty or good policy for the Cancer Commission as such to supervise or conduct an educational campaign for the control of cancer in Missouri. I believe such work should be under the direct supervision of the Cancer Committee of the Missouri State Medical Association cooperating with the Missouri State Board of Health, soliciting if found advisable the assistance of the United States Public Health Service. The membership of the State Medical Association should, I think, be alert and active in this work.

Who of us can foresee the embryological development of a State Cancer Hospital?

Medical Arts Building.

#### DISCUSSION

DR. EDWARD E. MANSUR, Jefferson City: We must assume that all physicians are interested in cancer and

its treatment. A disease so prevalent and so fatal surely demands their interest. We appreciate the information brought us by Dr. Cole.

There is a cause and effect in probably everything, and in connection with the recently enacted cancer hospital program the cause to some extent is the failure of the out-state profession to become as interested in this problem as they should have been. The effect of the law represents the latest evidence of the Government entering medicine. The enactment of this law and the creation of a new type of public service intended for the care of indigent cancer patients of course is a worthy cause. Many of us feel, however, that this law may be another step toward state medicine, which must be watched carefully to make sure the hospital does not soon accept patients, as most of our other state hospital institutions are doing, regardless of their financial standing. It is a fact that independently wealthy persons are accepted in our state hospitals for the insane and cared for at about \$40 a month. If such a service is extended to the tuberculous, the blind, the crippled, the insane, and now to the tumor patients, what group will come next? It seems safe to predict that in a few more years, if we do not take a more active and definite stand in this matter, half of our profession in this state will be merely certifying officers for these state institutions and will have to make a living out of the emergencies which arise in general practice. If we who are in private practice would survey our practice we would probably find that the non-emergency cases make up 90 per cent of our livelihood.

Perhaps all of us will soon realize that the citizens of our state must be cared for medically regardless of their ability to pay. As a matter of policy we must not only render them a type of service equal to the best, but we must also be willing to give this service freely to the poor until such time as some sort of compensation policy can be arranged with the city, county, state or federal governments. I know that generally we are rendering this service now and have been in the past, and it is likely that the quality of this service can be and will be improved in the future, not by the authorities but by an awakened medical profession. Our failure to do some of these things has had much to do with our state and federal governments setting up these types of service. We should be interested always in improving medical service, but let us strive to develop and keep this service at home where it belongs. Certain counties of this state are even now almost devoid of regular medical service. This is a deplorable situation and these tax supported centralized state hospital programs cannot help but render still less attractive the practice of rural medicine.

It is hoped that the best minds of our profession will become interested at once in developing better plans of rendering good service to the sick than those plans brought forth to date. I feel our duly elected officers of this professional organization should be asked to develop a program that will keep the sick indigent in the hands of his family doctor who may be assisted by local, regional specialists; and that some form of modest compensation from public funds be arranged for, to support this type of work. Certainly we must firmly insist that only the truly indigent be accepted for treatment at state expense. We know that rule has never been followed. Any other plan is unfair to the taxpayer and destructive to the private practice of medicine. Many of us feel that our Association, through its existing committees, is not safeguarding the interest of its members in not properly working out these problems. A poorly paid doctor is never a well equipped doctor. May I urge that all of you interest yourself in this problem for it means everything to your future and the future of medicine.

DR. EDWIN J. SCHISLER, St. Louis: Dr. Cole's presenta-

tion and the subsequent discussion by Dr. Mansur on the Cancer Hospital struck the keynote of our medical setup, not only in our state but in the larger cities as well. What is the Missouri State Medical Association or organized medicine going to do about it? Wait and let it take its own course, or take concerted action to correct this gross injustice for the benefit of the general profession?

If the membership spent more time on economics and not so much on politics this condition would not exist; you gentlemen are directly responsible for it because too many are ambitious for special personal favors, appointments to lucrative positions or officerships and are not considering the welfare of your fellow practitioners.

This was so well demonstrated in Jefferson City in January at the hearing of the medicolegal committee of the St. Louis Medical Society representing the medical and dental professions before the Attorney General for a quo warranto decree regarding the question of the right of a corporation to practice medicine. Your ex-presidents and officers of the Association, and your state medicolegal committee did not support this issue and were actively antagonistic to the policies of organized medicine in spite of the fact that this same type of practice had been declared illegal by the courts in several states, and its legality was being questioned in Missouri. This, of course, was no reason why the Attorney General should refuse his support because he did not give his opinion on the merits of the case, but allowed himself to be influenced by corporations, industrialists and politics, thus failing in the duties of his office.

You talk about socialized medicine. Why, you have it now, to a degree, for in Dr. Cole's statistical study and survey, and in Dr. Mansur's definite figures, it is indicated from the start that the State Cancer Hospital is already actually soliciting and receiving patients who are not proper subjects of public charity and who belong under the control of private facilities. This is just another setup which is making further inroads into medical practice. It is only a matter of time until you will be either institutional, railroad or contract doctors, or giving professional aid to the few remaining sick in your community, and this will take away from the public the personal contact of professional care.

There are absolutely no objections to the railroad hospitals in communities treating employees in the line of duty; but they also treat the dependents, and at times the relatives, of employees. How does that affect the doctor? For example, you gentlemen who are surgeons know that when these patients consult you and on examination need hospital care they go to the general railroad hospital for treatment, where service can be obtained free or at a reduced rate. Thus as a practitioner you lose by this unfair competition not only financially but also your professional contact.

In St. Louis we have further unfair competition by clinics and corporations which ignore their charters of organization and treat dependents of employees, and also contract with other corporations for medical, dental and surgical care with little remuneration for the doctors. Of this, time does not permit further discussion. However, the activities of the medicolegal committee of the St. Louis Medical Society to correct this abuse of corporate practice received absolutely no support from organized medicine, all members of which are equally obligated in honor and truth to observe the adopted policies and principles of the American Medical Association.

Unfortunately, we have not the unselfish support of our own members for a better understanding of our professional needs; there are too many who are ambitious for medical control and positions of affluence and lay aside principle to attain their respective wants.

In tax-supported institutions, indigents should be treated under the direction and control of a staff ade-



quately paid for their services, and with opportunities under a nonpolitical plan, to become career specialists in their respective fields, either as full time or part time employees.

The medicolegal or economic committee should be composed of members having no connection with railroads, corporations or institutions so they may give an unbiased opinion, according to the principles and policies of the American Medical Association.

A good many of these conditions can be corrected as shown by the St. Louis County Medical Society which has worked out a method of investigation which has brought good results for those applying for free medical and dental service by requiring them to make affidavit regarding their social and economic position, and also affidavits from their family physicians. This has reduced unwarranted clinic abuse about 60 per cent. Furthermore, as in all matters pertaining to the economics of the profession, this abuse of free clinics rests entirely with the physicians and dentists themselves and the free clinics (if they are such for every patient is charged a small fee) would soon be closed if the essential factor in any clinic, the doctor, were not available. Doctors can dictate to what class of patients they devote their services in rendering free service, and can refuse to give free attention until a thorough investigation of their circumstances is made.

In closing, may I say: If we do not dictate our own policies of medical progress for the future, the government or state will for, as I see it, this unfair competition is one of the causative factors of the economic distress of the general practitioner. The patient should be the first consideration; the needs and deeds of hospital and doctor are mutual.

DR. F. GREGG THOMPSON, JR., St. Joseph: The Buchanan County Medical Society has been trying to cooperate with the State Cancer Commission in establishing a cancer clinic in St. Joseph, following out the general plan of establishing these clinics in different parts of the state. In establishing this clinic the Buchanan County Medical Society feels that the treatment should be given only to indigent cases, and they feel that this can be done better by the members of the Society than by full time men. In establishing the clinic in St. Joseph there is the situation that the members of the Society are able to give their services in the various specialties which are required in the treatment of cancer. It is our idea that there is no such thing as a true cancer specialist; that there are different parts of the body in which cancer occurs and men who are specialized in treating those parts of the body are best fitted to treat cancer in those parts. We feel that by getting away from full time men we are protecting the medical profession and we are also giving the indigent patient the benefit of the skill of all the specialists. We feel that these cases should be carefully investigated, because as the doctor has stated, sometimes cases are sent, for various political reasons, because of a political pull, to these institutions. We feel that the medical profession should understand more about this matter. I do not believe that any member of the medical profession would refuse to treat an indigent case without pay; but I do not think we should be asked to treat without charge people who are able to pay.

We also feel that some major operations for cancer, for instance, cancer of the rectum that requires resection, cannot be done in country districts; there must be a hospital and a staff that is cognizant of the type of work to be done and it requires a clinical background and hospital service.

We have kept these principles in view in trying to establish the clinic at the State Hospital at St. Joseph which we plan to open next month, with the approval of the Cancer Commission. We are also of the opinion that a trained investigator should be employed at the

various clinics in the state to investigate the social and financial status of patients treated in these clinics.

DR. E. H. SKINNER, Kansas City: There are certain things that bother a great many physicians in Missouri with regard to the proper investigation for the admission of indigents to the Cancer Hospital. Inquiry has been made of the Cancer Commission about the method of admissions. The chairman of the State Cancer Commission replied that the admissions would be based upon the same requirements for other Missouri eleemosynary institutions. These are comparatively loose methods. At the present time that method is (1) by affidavit of indigency by the patient, (2) affidavit of the physician that the indigent patient has a condition that can be taken care of at the special state institution, (3) and the patient is certified as indigent and worthy by the judges of the county court. This, we feel, is too loose a method. It has been used for the admissions to hospitals for the insane and the tuberculous but it seems that we should now attempt to have a more strict interpretation of indigency, and that the State Cancer Commission should have investigators provided by the county courts. If we are to have further invasion of the private practice of medicine by additional avenues of state medicine such as this, we must not deprive the local physicians of their legitimate practice. We cannot continue to have good, well trained physicians throughout the rural parts of the state unless we make it attractive for them to practice there. If we are constantly taking away from their practice by the further increase of state medicine we are certainly denying them opportunity to earn a reasonable income.

We would like to feel that the State Medical Association, representing all the physicians of the state, would be inclined to propose a remedy to the State Cancer Commission so that a more strict interpretation of the law be employed than is now proposed. The law specifically states that the Cancer Hospital shall be for the indigent. We would like to feel that the State Cancer Commission would attempt to protect the profession. If this is the true situation in regard to insanity, tuberculosis and cancer, the state might even add certain surgical and obstetrical hospitals. If we do not protect the physician in the practice of medicine we will have more than cancer and tuberculosis and insanity invaginated into state medicine. We could rapidly channelize the whole practice of medicine through such methods. It has come to the point where we should have a revision of the admission methods not only for the cancer hospital but also for the admissions to all state hospitals.

Another thing. There are many large institutions with tumor clinics in the larger cities. There are certain large centers in the state that have facilities sufficient to take care of cancer therapy. It should be our business to treat these people nearer their homes when such service is available. The per diem method of payment for indigents would be useful in these various institutions.

We have a tumor clinic in the General Hospital in Kansas City that is supported by the city. The usefulness of that tumor clinic for contiguous counties should be encouraged and supported. Patients could come there, be convenient to their homes, and not have to go the greater distance to the middle of the state. We would like to feel that the Cancer Commission would be agreeable to help pay the way for indigent residents of Missouri who are within the Kansas City territory. The cities are just as much entitled to the distribution of tax funds as any rural district. This would be a method of taking care of those people in larger centers while keeping them nearer their homes.

These are at least three of the items which we think are worthy of consideration and which should be incorporated in any resolution asking that the State Cancer

Committee find out the attitude of the physicians throughout the state as to the method of admission and the criterion of indigency that the law imposes.

## ACUTE MASTOIDITIS WITH SURGICAL PROCEDURE

W. BYRON BLACK, M.D.  
KANSAS CITY, MO.

Acute mastoiditis, being one of the common complications of a great number of acute diseases, has received the attention of otologists for many decades, even as early as from 460 B. C. to 370 B. C. Hippocrates wrote at length on the treatment of acute inflammations of the middle ear, depletion by local blood letting, steaming, the instillation of warm mild drops, a cathartic and rest. From this early time until the present we have had at least one outstanding master of otolaryngology each century making some advance in this field of medicine. Riolan in 1649 A. D. proposed that the mastoid process be opened in cases of eustachian tube obstruction to equalize the atmospheric pressure on each side of the membrana tympani. Rolfinck in 1656 suggested artificial perforation of the mastoid for the relief of intractable deafness and tinnitus in cases with closure of the eustachian tube. There is no record that either proposal was ever practiced and the mastoid was not operated upon until a hundred years later when Petit in 1760 successfully opened the mastoid cells to relieve suppuration. Others followed with success, but in 1791 Kolpin operated on Berger, a celebrated Danish court physician, to relieve a severe deafness with tinnitus. Death followed from a purulent meningitis and sinus thrombosis. This incident is said to have retarded the development of mastoid surgery for nearly a century. It was not until 1864 that Turnbull and Crosby in America and Mayer in Germany revived the discredited operation. (The Wilde incision, 1853, was not an operation on the mastoid but a drainage for a postaural abscess.) In 1873 Schwartz's epoch making contribution laid the foundation for the modern mastoid operation. Other noteworthy contributions were made by Bärckner in 1883; Gruening in 1892; Muck in 1900; Mouret in 1903; Whiting in 1905; Gradenigo in 1905; Baldenweck in 1908; Kopetsky in 1930; Eagleton in 1930; Profant in 1931 and Ramadier in 1933.

*Etiology.*—Of the direct causes of acute middle ear suppuration the common cold or coryza is by far the most frequent. It also occurs in the exanthemata such as scarlet fever, measles, diphtheria, whooping cough and in fact in any of the upper respiratory infections. In the large majority of cases the infection reaches the middle ear by way of the eustachian tube. Age has an influence on the incidence of acute middle ear suppuration, children being more subject to it than adults on account of the presence of adenoids, much wider eustachian tubes and sinus diseases.

*Pathology.*—The pathological changes which occur in acute middle ear suppuration resemble the changes which take place in acute inflammation of the nasal or any other mucous membrane, modified by the shape and relationship of the infected cavity. In all but the rarest instances the infection reaches the tympanic cavity by way of the tube. The first change is an intense hyperemia and swelling of the mucous membrane. This is rapidly followed by the outpouring of an exudate which is at first serous but after a short time becomes seropurulent or mucopurulent from diapedesis of leukocytes and shedding of epithelial cells. The eustachian tube takes part in the process and on account of the narrowness of the lumen at its tympanic end speedily becomes blocked. The mucous membrane meantime has become swollen to from ten to twenty times its normal thickness so that with the continually increasing exudate and the narrowed cavity there is considerable tension which causes severe pain. The tympanic membrane becomes bulged outward and sooner or later gives way and allows the copious discharge of pus. If, however, the drum membrane does not rupture early the purulent exudate is forced back into the mastoid cells and may fill them completely. It has been my experience that incision of the drum head has had no effect on the course of the disease. My advice is always to be guided by the symptoms of pain and fever, bulging of the drum head or sagging of the posterior wall. Perforation of the drum is not a purely mechanical process but is preceded by small celled infiltration of its layers with destruction of part of the fibrous network. In a large proportion of cases perforation occurs before the mastoid cells are involved to any serious extent and the discharge of pus is followed by a gradual recession of the inflammation, lessening of the discharge and finally healing of the perforation and return to normal. When there is a delay of some days before perforation occurs and the inflammation continues the mastoid cells nearly always become involved. When the subsequent drainage through the perforation is free the inflammation in the mastoid cell may clear up although, on account of the complexity of their arrangement, drainage from the more distant cells must be imperfect at the best and healing is protracted in these cases. When the drainage is insufficient or absent and the infection severe the mastoid cells become intensely inflamed, necrosis of the mucous membrane occurs, the bony framework is broken down and absorbed and an abscess is formed. In time, the pus works its way to the surface or through the inner table of the skull causing a subperiosteal or intracranial abscess. Stewart in his descriptions of histopathology of mastoiditis thinks that air plays an important part in the ultimate outcome of the pathologic process. He calls this condition "edema ex vacuo." These different changes in the cells of the mastoid follow a well defined chain of phenomena (pathological). One noteworthy change is that the epithelium in



the tympanic cavity which is normally cubical becomes columnar and ciliated during the course of an acute inflammation; Nature's attempt to combat infection and help drainage.

**Bacteriology.**—The microorganism most frequently recovered in acute inflammatory conditions of the ear is the streptococci in one or another of its varieties. Next in frequency are the pneumococci and the staphylococci in that order. Other less frequent organisms are the pneumobacillus, bacillus pyocyaneus, diphtheria, etc. While streptococci are capable of causing severe otitis and mastoiditis, their virulence is greatly increased in healthy individuals when there has been some antecedent infectious disease such as influenza, measles, mumps, etc. Some cases of mastoiditis are extremely rapid or fulminating and in some the involvement of the mastoid appears to be almost simultaneous with the invasion of the middle ear. The streptococcus mucosus capsulatus of Schottmüller causes a type of otitis and mastoiditis which differs considerably from the ordinary suppurative form. This organism is now regarded by most bacteriologists as belonging to the pneumococci rather than to the streptococci. It has a tendency to grow and change and is not lanceolate in shape but has a thick capsule and is soluble in bile and gives fermentation reactions like the pneumococci. It is now classed as Type III pneumococcus.

**Classification.**—Many classifications have been advocated and probably not any one entirely fills every requirement. Kopetsky divides acute mastoiditis into the coalescent and hemorrhagic types, and the coalescent into the classical or painful, painless or asymptomatic and the perforating type (subperiosteal and Bezold). Some otologists do not believe the hemorrhagic type is a distinct clinical entity but represents the early stages of a virulent infection in which the mucous membrane and cellular structure bleed easily.

Cell types of the mastoid process are (1) pneumatic, large cell type; (2) diploetic, small cell type, and (3) sclerotic, hard like ivory.

The classification of Meltzer of cell groups as to the position of the lateral sinus and relation to the cortex, digastric crest, posterior wall of the canal, etc., determines to what extent pneumatization will occur and causes a definite arrangement of cells in relation to it. Once the sinus plate is exposed and its position in relation to the structures named is noted the cellular pattern of the mastoid becomes known.

#### GROUPS

1. *Superior Group.*—(a) Antero-superior cells. This group includes the superficial and deep zygomatic cells. (b) Posterosuperior cells (angle, petrosal cells). This group includes the cells underlying the tegmen mastoideum and occupies the angle formed by the anterior and posterior surfaces of the temporal bone. These are the important cells extending posteriorly from the antrum to the lateral sinus where it joins the cortex of the

squama. Occasionally, the cells of the angle extend into the parietal and occipital bones where they come together at this point.

2. *Antero-Inferior Group.*—(a) Cells of the posterior wall of the canal and the tip. These cells extending from the antero-inferior margin of antrum along the posterior wall of the canal include the cells at the tip as far back posteriorly as where the digastric crest joins the cortex. The cells lie above a plane passing horizontally to the facial canal. The deeper cells of the canal wall coalesce with the next group, when present. (b) Retrofacial cells. These cells lie posterior and medial to the facial canal; superiorly, they come in contact with the deep subantral cells around the lateral and posterior semicircular canals, and inferiorly with the cells overlying the lateral sinus in direction of the jugular bulb. The extent of development of these cells is dependent on the position of the lateral sinus.

3. *Mesio posterior Group.*—These cells are the intermediate group lying interposed and coalescing with the superior and antero-inferior groups. They make up the greater mass of cells and lie in front of, immediately over and posterior to the lateral sinus. The posterior cells are commonly designated as peripheral or marginal cells, lying above and below the emissary vein.

The sublabrynthine and perieustachian tube group of cells are not mentioned here because they play no role in relation to the lateral sinus.

#### OPERATIVE PROCEDURE

There is a wide difference between the infant and the adult mastoid. A few practical points should be kept in mind for operative procedure; namely, the mastoid region of the newborn is flat, the process itself is absent, the antra, the digastric fossa and the stylomastoid are superficially placed. The mastoid process develops with the increase in size of the sternocleidomastoid muscle. At the end of the first year, when the infant attempts to exercise its balancing power, a considerable increase in the size of the mastoid process occurs. The normal development of air cells commences at about the age of 2 years. If pneumatization is not interfered with it is complete by the end of the fourth to fifth year. The growth of the mastoid is practically completed at puberty but there will be an increase in thickness of the outer layer and a further extension of the cells in the vicinity of the sinus and apex. The stylomastoid foramen lies superficially in the infant. It may be considered to lie on the lateral and not on the under surface of the skull. For this reason, incision should commence just above the level of the tip of the mastoid and be carried upward. The antrum lies farther forward and lower down in the infant than in the adult. It is the squamous portion of the temporal bone that is well developed. For all practical purposes, therefore, the mastoid operation on the young infant is not an operation through the mas-

toid but through the squamous portion of the temporal bone. The bony roof of the external meatus is almost nonexistent in the infant, hence there is danger of opening into the middle fossa. The most reliable landmark in the infant is the posterior root of the zygoma. The lower level of this marks the upper level of the tegmen antrum. The progress of subperiosteal mastoid abscesses is rapid in children under 4 years of age. The infantile lateral wall of the antrum is thin and contains islets of cartilage. The bone is exceedingly vascular, the cortical layer thin and the mastoid largely or entirely diploic.

There is no hard and fast rule for treatment previous to operation. One must be guided by the course of the disease. Conservatism should be the guide during the first two to three weeks. Allay the fears of the parents and explain to them the disease itself, its course and complications. The parents should always be taken into the doctor's confidence. Do not forget that they must assume their share of the responsibility. Do not allow the parents to load you up with all the burden.

The ear should be cleansed with small cotton applicator pledgets, never by douching the ear. A well balanced diet should be fortified by small amounts of concentrated vitamins each day; mild laxative should be given when necessary, and fluids, orange juice, etc. A daily four time temperature chart should be kept; small doses of aspirin t. i. d. for pain, temperature and nervousness and small amounts of barbitol of some kind for sleep if restless should be given. A frank mastoid infection over a period of two to three weeks gives a picture of sepsis in the child, yellow cast to skin, with loss of appetite and energy, and a hemoglobin down curve. The child is up and down during the day and gets just a little sicker each day. At this stage the mastoid is well walled off and the vaccination is complete. Now is the time for surgical intervention. As Ruttin so aptly describes it, there is no such thing as an emergency mastoid. If the patient has reached this stage it is too late to operate as meningitis has set in. Most so-called emergency operations are "fee operations" but it is well to keep in mind that certain virulent organisms can completely destroy the mastoid process in a few days.

#### DIAGNOSIS AND INDICATIONS FOR SURGICAL INTERVENTION

1. Careful history of onset as to time of first symptoms (pain or discharge from ear).
2. Character and stages of discharge, type of bacteria present.
3. Downward hemoglobin curve.
4. Roentgen ray studies, preferably after the second week.
5. Repeated examinations of the canal wall, posterior and superior.
6. Discharge of three weeks or over. (Indicates the chief source of the discharge is beyond the limits of the tympanum and antrum.)

7. Mastoid tenderness at antrum, emissary vein and tip. (This tenderness does not mean anything until second week.)

8. Fever curve. Fever in adults, not in children, in the second week that is not due to influenza or the course of the otitis media, means a complication. In children fever does not mean so much as they react more easily and give higher temperatures. Septic chills and sweats give a picture of septic absorption.

9. Subperiosteal abscess or postauricular edema.

10. Vestibular irritation. (Vertigo, vestibular nystagmus, nausea, vomiting.)

11. Paralysis of abducens or facial nerve.

#### MEDICATION PREVIOUS TO OPERATIVE PROCEDURE

Patient should be hospitalized with the usual thorough check. If a child, I usually give a small dose,  $\frac{1}{2}$  grain of Abbott's nembutal increasing the dose in relation to age and body weight, at bedtime the night before and one hour dose again before the operation. This allays the usual nervousness before a general anesthetic. Young adults and adults get a one sixth or one third grain of pantopon in addition one hour before going to the operating room.

#### OPERATION

The preparation and instruments have been so well standardized it is not necessary to discuss them. One should have some definite plan in attacking the mastoid process and contents. Incision should be made posteriorly far enough to just circle the outer limits of the process from the tip below to the level of the zygoma. In this manner you have a wide flap; this allows you to retract forward and not disturb the periosteum posteriorly, gives a quicker healing and a smaller scar. After hemostasis the periosteum is raised and retracted until the supramental angle and the spine of Henle are identified. The tip fiber of the sternomastoid is divided with sharp pointed scissors. In very young children with the mastoid not developed the incision should be made somewhat higher to avoid the superficial exit of the facial nerve at the tip.

A large gouge is used in the exposure of mastoid cells. The cortex is taken off first parallel to the posterior canal from the top of the suprameatal triangle to the tip. This groove is deepened along its length until the mastoid antrum is exposed and the horizontal canal identified. The rest of the cortex is removed and the cells are obliterated in the following order: Superior cell group, posterior superior cell group, postantral cells; the outer antral wall and the upper and outer aditus are enlarged and the zygomatic group, the mesioposterior group, the anterior inferior and the retrofacial and cells between the sinus and the bulb. The posterior canal wall should be taken down and all the pockets and overhang should be obliterated and the edges smoothed down. This eliminates tender areas if scar tissue formation occurs and makes the



auricle fit into the mastoid wound without deformity.

#### CLOSURE

Flushing the wound with warm saline solutions cleanses the antrum of clotted blood and small spicules of bone. The cavity is first packed with sterile plain gauze, the periosteal edges are brought together and sutured with absorbable gut from above downward toward the tip leaving a one suture opening at the bottom. The first packing is taken out through this opening. One half inch vaselined gauze is packed through this opening into the cavity until it is filled. The skin is approximated with silkworm suture leaving the small opening at the most dependent part. A small wick is put in the ear canal and removed at the first dressing. At the first dressing (forty-eight hours) the silkworm sutures are removed and a small piece of the strip vaselined gauze is pulled from the wound and cut off. The removal of the silkworm suture the first forty-eight hours prevents stitch abscesses or secondary infection in the skin edges. Some of the packing is removed each day until all has been removed which is about the eighth day. If the secretion is still somewhat abundant a small strip of plain gauze can be inserted in the opening and the wound probed at each dressing. With complications such as inflammation about the dura, sinus or middle fossa, it is best to pack the wound open and not worry about the amount of scar you may have. After all a large scar is preferable to a lost patient.

#### AFTER-CARE

The patient should be confined to bed until all symptoms such as fever, pain or headache disappear. Uneventful recovery is the rule unless some other factor enters the picture such as persistent middle ear discharge, an infected sinus, adenoids and tonsils, petrousitis, infected cells and granulation or necrosed bone causing the continued discharge and slight temperature. If the latter occurs the wound should be reopened and explored.

535 Professional Building.

#### HEMOPTYSIS IN MALIGNANT HYDATID MOLE

Edgar R. Pund, Robert B. Greenblatt, Augusta, Ga., and Cleveland Thompson, Millen, Ga. (*Journal A. M. A.*, June 11, 1938), observed a case of invasive mole in which hemoptysis was a prominent feature. Roentgen studies of the chest revealed metastatic foci in the lungs. Following hysterectomy the metastatic pulmonary foci regressed and the patient recovered (without radiation therapy). The biologic hormone assay for gonadotropic substance in the urine was only 5,000 mouse units per liter before hysterectomy and 150 mouse units per liter three weeks after operation. These low hormonal values were in harmony with the regressive features of the neoplasm and were indicative of a hopeful prognosis. The hemoptyses in such cases are due to pulmonary deportation of villi or syncytial cell masses with transitory proliferation rather than true metastases. Removal of the primary focus, i. e., hysterectomy, should always be performed regardless of the seeming hopelessness of the situation.

## GONORRHEA IN THE MALE

JOHN R. CAULK, M.D.

ST. LOUIS

The appalling frequency of gonorrhea, as well as its profound influence upon the health, happiness, social and economic life of any community, pronounces it the most serious disease in the realm of medicine and justifies any concerted effort toward disseminating a more thorough knowledge not only to the physician concerning its prevention and cure but also to the laity as to its many menacing effects.

Morrow estimated that 60 per cent and For-scheimer 51 per cent of the adult population of the United States have had gonorrhea. Some authorities claim its occurrence to be as high as 90 per cent. The majority of these are infected before their 25th year.

Recent compilations made by the United States Public Health Service show that about 1,037,000 new gonorrheal infections occur annually in the United States and it is evident that many other cases are not reported owing to the secrecy surrounding the disease. Fifty per cent are treated by drug store administration. Thirty-one per cent are cared for at public expense. The disease occurs more frequently than the combined incidence of syphilis, scarlet fever, tuberculosis, diphtheria, typhoid, poliomyelitis and smallpox. It is the pest of the army and navy. Before the war it stood first in prevalence among the diseases compiled from the army records. Twelve per cent of all the troops had gonorrhea, ranking it ahead of syphilis, chancre and tuberculosis. It accounted for 13 per cent of absentees from army days in 1919 and nearly 18 per cent in 1921. Eight persons of every thousand of the entire male population have been shown to be infected and 1.8 per thousand of the female population. This shows that Kipling was right: "the female of the species is more deadly than the male," one female infecting four or more males. The annual rate in the U. S. Navy is 132 per thousand and in the army 49 per thousand.

Among the male population between the ages of 15 and 45 loss of time caused by gonorrhea amounts to 21,000,000 days per year or about 60 to 80 million dollars in personal revenue loss. These facts alone are sufficient to convince us of the tremendous economic importance of such an infection.

The social importance of gonorrhea is so beautifully described by Keyes that I shall quote him:

The social importance of gonorrhea depends upon its prevalence, its transmissibility, its grave results in women and children and the sterility in which it so often results. . . . A disease that attacks more than half our young men, a disease that affects thousands of children and hundreds of thousands of women, is important to society by its prevalence alone. . . . A disease that enters the family almost exclusively through illicit sexual contact, a disease that may be transmitted long

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after the patient thinks himself or herself well, a disease that may be transmitted to the wife from the prostitute via the offending husband, a disease that may be passed from the wife, thus innocently infected, to the eyes of her infant at birth or to its genitals thereafter, is eminently important to society. . . . A disease that incommodes the man and may invalidate the woman, a disease that is the occasion for most of the major gynecology of today, a disease that unsexes thousands of women, that makes chronic invalids of many, that kills not a few, a disease that in this country causes from one quarter to one half of the congenital blindness, that is accountable for about one third of the blind in our asylums, is a real peril to society. . . . A disease that causes fully 50 per cent of the involuntarily sterile, or one-child sterile marriages, that destroys the power of procreation in man as well as in woman, is indeed a peril to the race.

It is therefore apparent that gonorrhea is the most widespread of all diseases and that it is spreading from year to year. There is a sad indifference on the part of both doctor and patient toward this dreadful disease, and the defeat of this indifferent attitude is the paramount issue in the success of our future program against the disease.

Gentlemen of the Missouri State Medical Association, we must be resolute and determined to reduce its incidence and tragic consequences. Most doctors look upon gonorrheal infections in the male with levity. They give pills, or probably injections, tell the patient to report from time to time and allow him practically the sole responsibility until complications ensue. I hope this symposium will stimulate your awakening to the absolute necessity for the strictest attention to this disease.

Because of the great likelihood of sexual activity in youth there seems no question that instruction in prophylactic measures is bound to be the greatest safeguard. This has been definitely demonstrated in military life and I understand that at one time when the navy demanded prophylactic protection to every sailor who had shore leave, the incidence of gonorrhea was tremendously reduced and when this routine was eliminated by one of our naval secretaries the prevalence of the disease within a few months increased ten times. (He evidently knew more of the sea than of the "semen.") The incidence was again reduced by reviving the prophylactic regime.

In our clinics after the war the occurrence of gonorrhea was strikingly lessened but within a year the regulations had been dissipated from their minds and the incidence went back to its former proportions.

No one would mate with a partner whom he believed was infected, but the faith youth has in a beautiful, charming girl leads him to disregard the strict measures of protection. The greatest lawmaker of all times said, "Thou shalt not commit adultery" but this law is broken more than any other, hence we must look to measures of prevention other than the moral campaign which in itself has been ineffectual through the ages. (In fact Exner says the chief reason why the public is not

better informed about venereal diseases has been a taboo against their discussion in good society. They have been looked upon as shameful—the just punishment for sin. Moral and public health issues have been confused and this has blocked progress, so we must focus the light of truth upon the health issue.)

The regimentation of prostitutes has been a failure in all countries. The shop girl, the wandering widow, indeed unsuspected members of the so-called upper set certainly afford less assurance against contamination than even the partially supervised house of prostitution. Prevention must be taught.

It is stated that our country has an incidence of venereal diseases forty times as great as that of countries where positive control has been undertaken. Yet the means of control are known and in the possession of the medical profession. If fully applied these diseases could be virtually stamped out in a short time.

We must stand united in assuming the grave responsibility of treating this disease and must accept a more serious attitude toward its prevention. First, we must train ourselves more thoroughly concerning the best possible methods of treatment and above all utilize every possible avenue and channel available to make known the serious consequences to the public. Public instruction, through agencies which are current and thoroughly familiar to you all, must be more earnestly undertaken. This disease should be dramatized through medical organizations, public health agencies, schools and social and religious institutions as is being done with syphilis, indeed, even through magazines and newspapers. This is being admirably fostered by the American Neisserian Society and is a great step for future progress.

It is evident that the prudishness of the past is being broken down by the broadmindedness of the present, and younger America stands in eagerness to be instructed and to understand everything important to its welfare and safe living.

We as physicians possess a far more potent influence in checking this disease than all this general public instruction, that is, through the medium of our intimate relationship in the practice of medicine. If we would all concentrate upon instructing the parents of every male child to allow us to contact his boy at the age of puberty and tell him definitely of the dangers of the disease to his future life and to his community, and also to inform him that if he should ever be exposed to protect himself and seek immediate prophylaxis, we can do immeasurable good. We will be the boy's pal and he will not evade us. Fear will be eliminated and he will seek us instead of a drug store or some other incompetent adviser.

This procedure should in no way reflect upon the morals of youth. We as a profession advocate as high a moral standard as any group of men living but it is not within our province to teach morals to the youth. If a boy's moral status is not created by



his family associations and his religious advisers we cannot be expected to transform him but we can prevent contamination and cure him if he is sick. If a person cannot swim and is caught in a turbulent sea a life preserver is necessary to save him, so let us have the life preservers ready.

The diagnosis of acute gonorrhea is usually unmistakable and I need not take your time to discuss it. There are, however, numerous cases which offer confusion and present a most serious problem to the patient. These are discharges occurring shortly after exposure, within 24 to 48 hours, and those which are tardy in appearance, from 8 to 10 days. Some of these may be gonorrheal but the majority are the result of prostatic and seminal vesicle inflammation. These cases require accurate and scrupulous attention for differentiation. Many of these discharges microscopically show no organisms hence they are not gonorrheal but you would be surprised how often patients are treated for such discharges without a smear having been made. In the presence of coccal organisms their morphology as well as location need careful observation. Occasionally there are smears which will almost defy an accurate diagnosis. The organisms may even decolorize by Gram. Usually such stains show organisms within and without the cell and mixed infections in such instances are not acute gonorrhea. Usually when gonorrhea is acute other organisms will disappear. There are occasionally strains of very low virulence which may deceive us and only careful watching and thorough clinical study with counter stains and sometimes culture will solve the diagnosis. Such discharges frequently occur in patients who have never had gonorrhea and as previously stated result from prostatic and vesicle inflammation. The idea that a person must have gonorrhea to have such infections has long since passed but the mistake in diagnosis is common and we must be careful in accurately studying these mild atypical discharges and not disturb the peace of mind and even family relationship of such patients.

Once the diagnosis of acute anterior gonorrheal urethritis is established, immediate treatment should begin. I see no excuse to delay except in the hyperacute cases. I am sure I have no magic wand to wave for the healing of this malady which has been in the past the most overtreated and under-investigated of any of the serious diseases. At least 50 per cent of all such infections are treated by the drugstore or patient alone and it is easy to see how improperly the disease is cared for. Our hopes have been stimulated many times over the reports of a new drug which was claimed to be striking in its effects and yet today we are in the same predicament as ever. All the chemicals, dyes, biological preparations have been tried but there is still no specific remedy. We have learned one thing in the treatment of this disease and that is, that most of the serious troubles result from overtreatment rather than from the disease and that bland simple,

non-irritating medication is the secret of sound therapy. It does not make much difference which drug one uses if it is kept mild. The silver proteins, particularly protargol, dilute mercurochrome, solutions of acriflavin and our old friend potassium permanganate are still the most popular medications. No drug must be used which has a tendency to create a chemical irritation producing edema which will block the outflow of secretion from the innumerable ducts which drain the peri-urethral glands.

We know that gonorrhea is a subepithelial disease; it penetrates early during its incubation and there produces its endotoxins. The products of its reaction must have drainage to the surface hence the keynote of success is the endeavor to keep the orifices free. Certainly no caustic medication, no zinc solutions or silver nitrate should ever be used in the initial stages. The old "bull head clap," chordee and phlegmons of the past, resulted from such drastic medication and not from the organism alone.

We must realize that acute gonorrhea is a self limited disease and during its process of development we must endeavor to prevent it from its natural tendency of invading deeper structures. Every gonorrheal subject should be supervised daily and carefully. The strictest hygiene should be observed. Plenty of rest and nutritious food free from condiments and irritants are essential and no alcohol in any form. Careful attention to bowel elimination is necessary. Absolute abstinence from any sexual excitement must be observed and gentleness and cleanliness is the cornerstone of therapy. The patient should be carefully instructed by the physician how to administer the injections with a glass bulb syringe. A piston syringe should never be employed. If gonorrheal patients could be confined to bed for a month there would be little trouble in the treatment, but this cannot be hoped for. A sanitary bag should be worn to insure free drainage. Cotton should never be placed beneath the prepuce. The most important time to observe such infections is between the second and fourth week for it is then that posterior involvement is most likely to occur. If during this time the second glass of urine becomes cloudy the character of the treatment is changed. With patients under daily observation it is evident that the deep urethral process is only 24 hours old and I feel such cases should have the infection followed up by deep urethral irrigations or injections of mild hot germicidal solutions. In this way many acute reactions may be prevented. In case the patient presents symptoms of irritation it is then well to suspend topical treatment and order him to bed. Ingestion of large quantities of water with free elimination is highly advocated and I feel that in most instances it is essential. It possesses the disadvantage of disturbing urethral rest and in case of internal medication interferes with its concentration. I hardly know what to tell you. I have been impressed recently with the fact

that the azo dyes, pyridium, mallophone and sere-nium, have exerted a definite benefit in the treat-ment of this disease and hence the urine must be kept more concentrated during their administration. The same holds true for sandalwood or acriflavine.

After the acuteness subsides one must then re-sume the anterior medication and continue with posterior low pressure mild irrigations. If the dis-ease progresses and urinary distress becomes pro-nounced, acute prostatitis and seminal vesiculitis are on their way. Here absolute rest is neces-sary, hot applications, particularly through rectal douches or other means, must be applied and in-ternal urinary antiseptics continued. Sedatives to allay spasm and discomfort are necessary, the rec-tal suppository of belladonna and opium seeming the most satisfactory. In case of prostatic abscess which at first is difficult to differentiate from an acute catarrhal prostatitis, drainage must be ef-fected and attention must be given to urinary ob-struction which frequently accompanies it. Such ab-scesses occurred in about .8 per cent of the cases in my clinic. Some may require perineal section and drainage but the majority can be handled by puncturing the prostatic projection with the tip of a sound. This sounds unsurgical and yet it was shown by Stevens of Bellevue in New York that it was a most satisfactory method. I have done it a number of times and the response is prompt. I have seen no untoward results.

Epididymitis is the most frequent complication of acute posterior involvement and occurred in our clinic in 17 per cent unilaterally and less than 5 per cent bilaterally. Such a complication requires rest, fixation, heat or cold, foreign proteids, sedatives or, preferably, epididymotomy. The condition never kills, always gets well but always leaves its scar and usually results in the occlusion of the drainage system from the testicle to the seminal vesicle. If this is bilateral, sterility is the natural consequence. It is definitely shown that epididymotomy can be relied upon to furnish less likelihood of sterility than palliative measures and should certainly be done in case of bilateral epididymitis or a secondary epididymitis following a previous attack on the opposite side. In the extremely acute cases which create excessive pain I have seen very beneficial results secured by aspirating the inflammatory hydrocele fluid with a small Wassermann type needle. It relieves the tension immediately. Diath-ermy affords prompt relief from pain in many instances. Calcium gluconate and chloride have been used with some appreciable effects in reliev-ing pain.

Peri-urethral abscess is a frequent accompani-ment of gonorrhoea, occurring most commonly near the meatus at the side of the frenum, at the peno-scrotal juncture and perineum. As a matter of fact these complications in my experience have oc-curred more commonly in the chronic phases of the infection than in the acute. Abscesses located in the region of the frenum are the most troublesome.

Whenever possible they should be opened from within the canal through an endoscope as external incision is likely to create a troublesome fistula with the occasional drop of urine which is not only bothersome but difficult to heal and so frequently serves as the ignition point of reinfection. Searing the tract with a high frequency current with a very fine electrode is occasionally necessary. The deep abscesses must be opened surgically through the perineum. They should never be attacked in front of the penoscrotal juncture.

As you see I have offered no novelties in the treatment of gonorrhoea. I have never seen any value derived from vaccines, sera or gonococcal fil-trates in any cases of anterior gonorrheal urethritis and indeed but little in any of the other phases of this disease.

Heat therapy should be expected to be of service but Dr. Deakin in our clinic tried a number of cases with local diathermy to the penis over long periods of time and even packed the penis and electrodes in clay. There was no appreciable benefit observed. Certainly the urethral insertion of a diathermy elec-trode is most strenuously to be condemned. It is evident that the extensive circulation of the penis disperses the heat too quickly for any appreciable elevation of tissue temperature.

Fever therapy unquestionably would be of tre-mendous value and has been in many instances in which it has been employed but there are not enough fever producing apparatus and at present it seems a little heroic to combat the average ante-rior urethral infection. I have recently learned that prontosil has been employed with the most aston-ishing success; that anterior urethral infections have been cured within forty-eight hours. This I hope is true but I have had no personal experience.

The most important phase of gonorrheal therapy should occur after the acuteness has subsided; that is, when the discharge ceases, the urine is clear and the patient is symptomless; then is our time to per-form a real service. Since the majority of infections involve the deep structures, a latent infection is almost sure to exist after the vaccination of the acuteness is over. We must now investigate the prostate and seminal vesicles and urethral glands which are the most important structures for late disturbances. The old German custom which is still prevalent in this country of testing the patient out by the indulgence of beer or other alcoholics or the instillation of an irritating chemical such as sil-ver nitrate is a most pernicious custom and must not continue. I have seen two deaths from such an attempt to satisfy the curiosity of patient and doc-tor. I will relate one: A young doctor friend of mine, who had gone through his infection nicely, was apparently clear and well as far as he was con-cerned in his sixth week. I was continuing his treatment. He solicited my sanction to allow him a glass of beer which was refused, but he volun-tarily drank two bottles of beer during the eighth week, following which he was suddenly seized with



a generalized gonorrheal septicemia, polyarticular infection, endocarditis and died.

When the disease is quiescent and the patient and oftentimes the doctor are lulled into a false security of recovery, is actually the time to undertake the curative therapy, aiding nature in gradually eliminating the infection through mild prostatic and vesicle massages followed by irrigations to relieve the urethra from reinoculation and later the instillation of mild germicidal solutions to the deep urethra. This must be continued until the infection has definitely gone and the fixation test is negative.

The gonorrheal fixation test is believed by some to be an ideal index as to cure. I have routinely employed it for many years and have great faith in it and yet in our gonorrheal clinic Dr. Deakin who has worked so faithfully claims that in 1500 cases in which it was employed it was less than 50 per cent accurate.

One should never use an instrument on a gonorrheic until he has been apparently well for three months. We do not have to concern ourselves with strictures; these are late complications and in properly treated cases should seldom occur. The mere passage of a sound at an improper time is likely to explode the whole condition and eventuate seriously. The most reliable test of cure is freedom from pus in the expressed secretions over a protracted period. Time is the greatest criterion.

No one who has had gonorrhea should be allowed to marry until at least a year after the infection has subsided. It is often necessary to postpone marriages on this account and it is a difficult task but this routine above all others should be adhered to.

Gonorrhea needs your concerted attention for its prevention and cure. It is your job. So let your light so shine.

723 University Club Building.

#### ABDOMINAL MANIFESTATIONS OF HYPER- ACTIVE CAROTID SINUS REFLEX

Abdominal manifestations of the hyperactive carotid sinus reflex appear to be uncommon. The manifestations in the case that J. Edward Stern, New York (*Journal A. M. A.*, June 11, 1938), describes consisted of abdominal cramps and diarrhea, occurring in conjunction with other symptoms of severe autonomic disturbance and with syncope. There was nothing in the history to point to the carotid sinus as the origin of the widespread autonomic disturbances. However, in only approximately 25 per cent of cases is an important lead obtained in the anamnesis. The avoidance of constriction of the neck by the use of loose collars is sometimes observed. The abdominal disturbances that occurred in the author's case are due to severe widespread autonomic discharge with the afferent limb of the reflex arc in the carotid sinus. They are relatively unusual and may further confuse the differential diagnosis between hyperactive carotid sinus reflexes and idiopathic epilepsy. It is not unlikely, however, that with more general recognition of these disorders more cases of this type will be observed.

## CONGENITAL UMBILICAL HERNIA

### REPORT OF A CASE

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True congenital umbilical hernia, sometimes also called exomphalus, omphalocele or hernia funiculi umbilicalis, is a relatively rare condition. It is said to occur in its simplest form, hernia consisting of omentum only, once in from 5000 to 6000 newborn infants, and hernia containing intestine or viscera once in 10,000. It is more frequent in males.

In order to understand the occurrence of the so-called hernia into the umbilical cord one should recall the development of the human intestine. Quoting Bardeen, there are three fundamental loops formed; namely, the enterocolic which extends forward into the umbilical cord and is supplied by the superior mesenteric artery; the gastroduodenal which projects to the right at the base of the enterocolic loop and is supplied by a branch of the celiac artery; and the left colic which projects to the left of the base of the enterocolic loop and is supplied by the inferior mesenteric artery. The enterocolic loop is the most important from the standpoint of developmental anomalies, fundamental or slight, as the other two loops seldom produce variations. The enterocolic loop gives rise to the distal part of the duodenum, the jejunum, ileum, cecum, ascending colon and right half of the transverse colon. Bardeen states that the enterocolic loop protrudes into the umbilical cord in a 24 mm. embryo and returns to the abdominal cavity in a 40 mm. embryo. The return of the intestine to the abdominal cavity is due to a fall in the intra-abdominal pressure which results from the increase of space within the abdomen; the extra-abdominal pressure pushes back the sac.

Saunders classifies umbilical hernia as follows: (1) Congenital, (2) infantile acquired and (3) adult acquired. According to Milch, a true congenital umbilical hernia has a ring formation and occurs directly through the center of the umbilicus. Its coverings instead of being those usually found in a hernia consist of the embryonal mesenchymal tissue and Wharton's jelly which constitute the umbilical cord. The postnatal or infantile acquired umbilical hernia so commonly seen differs from the true congenital type in that it is more eccentrically situated about the umbilicus and has the usual coverings of an adult acquired hernia. The coverings of an adult acquired umbilical hernia are peritoneum, fat, fascia and skin.

In a recent article by Milch, in 1931, he gives the following theories of the probable causes of congenital umbilical hernia: "Aschoff expressed the

opinion that, along with other defects in the abdominal wall, this condition was explained best on the basis of a persistence of the fetal concavity of the dorsal spine; Kermanauer attributed the defect to an arrest in the development of the primitive vertebrae and abdominal wall; Ahlfeld believed that the persistence of the omphalomesenteric duct was responsible; while others are of the opinion that the presence of a fetal peritonitis is the underlying mechanism." Saunders attributes the real cause of congenital umbilical hernia to some interference with the closure of the umbilical ring such as an increased abdominal pressure, traction on the cord in utero due to its being too short or becoming entangled around the limbs, body or neck. If the hernia is due to a failure of the return of the intestine to the abdominal cavity in a 40 mm. embryo, its contents should consist of the elements which develop from the enterocolic loop.

A review of the literature shows that the pathological condition varies widely. From a slight bulging navel containing a small piece of omentum or loop of gut, there may be several loops of intestine including appendix, cecum, transverse colon, liver, spleen, pancreas, coils of small intestine and stomach. One may encounter remains of the allantois or remains of the omphalomesenteric duct. If the allantois persists, communication may exist with the bladder by way of the urachus. If the omphalomesenteric duct persists, it may open to the external surface of the cord.

The prognosis of this condition varies directly with the type of treatment, time of treatment and contents of the hernia. The mortality rate following operative treatment varies from 12 per cent to 66 per cent, the average being 26.3 per cent, while the average mortality from conservative treatment is 63.7 per cent. It has been noted by authors that in the operative cases the mortality rate increases with the lapse of time from birth of the child until surgery is performed. This increase in mortality rate has been explained by some writers in that during the first 10 to 12 hours after birth the intestine is completely free from bacteria thus minimizing the chances of postoperative peritonitis. In small congenital hernias the outcome is fairly good if the condition is recognized early, the operation undertaken while the sac is still moist and before the hernia has been increased in size by taking of fluids into the stomach. As Watson has pointed out, the prognosis is always very grave unless the hernia can be reduced and the opening closed by operation. Usually infants with large congenital hernia are stillborn or die soon after birth.

In congenital umbilical hernias, as in other conditions, generally speaking, there are two methods of treatment; namely, conservative and surgical. In our opinion, conservative treatment should be used only in very small reducible umbilical hernias, and conservative treatment consists mainly of keeping the part dry, maintaining pressure on the tumor and keeping the recti muscles in close apposition

by adhesive straps passing around the abdomen. The adhesive straps are best applied while the infant is suspended by his feet. The conservative or mechanical treatment should not be used in large umbilical hernias as the outcome without surgery would be necrosis of the cord with exposure of the intestine followed by peritonitis. If one stopped to realize that the existence of the infant in utero is most favorable for the healing of the ring as there is no likelihood of increased intra-abdominal pressure by coughing, colic or constipation, the conservative treatment would be employed less often.

The operative procedures that have been used in congenital umbilical hernias are numerous and vary with the particular case and surgeon. Watson describes two methods, the extraperitoneal and the intraperitoneal. According to Watson, the extraperitoneal method is the one most frequently used as it produces the least shock and gives a lower mortality rate. His procedure is as follows: The amnion and Wharton's jelly are separated from the underlying peritoneal layer of the sac without opening the abdominal cavity, the edges of the hernial opening are freshened on both sides, the sac folded over and sewed in place and the muscle and skin edges brought together over it with strong sutures. However, in a review of the literature we found that in congenital umbilical hernias the peritoneum usually stopped at the umbilical ring and did not cover the intestinal or visceral contents of the hernia, as was true in our case. The intra-abdominal method is used when for any reason it is necessary to open the abdomen to examine the viscera or deal with peritonitis or when the hernial contents cannot be reduced through the umbilical ring.

#### REPORT OF CASE

Baby H., male, was born at Research Hospital at 5:56 a. m., September 12, 1937, at nine months gestation. Pregnancy had been essentially normal in every respect. The mother was in active labor for three hours. The infant cried spontaneously. The weight was 6 pounds, 12¼ ounces. The child appeared normal except for a large umbilical hernia measuring approximately 7 by 6 by 5 cm. which could not be reduced. The hernial sac consisted of a thin transparent mesenchymal tissue (amnion) through which coils of intestines could be seen. The hernia increased in size when the patient cried. The umbilical cord was approximately 60 cm. in length and was not coiled around infant's neck, body or extremities. Upon closer examination, a patent omphalomesenteric duct opening to the external surface of the umbilical cord about 5 cm. from the umbilical ring through which meconium could be expressed was noted. The infant urinated and passed meconium rectally voluntarily at birth. The cord was ligated and severed above the hernia about 12 cm. from the umbilical ring. Warm saline packs were placed around the hernia and cord.

The patient was seen by Dr. Montgomery in consultation and operation was decided upon on the following grounds: (1) It was evident that the hernia could not be reduced due to the patent omphalomesenteric duct; (2) an operation would be necessary to close the patent omphalomesenteric duct; (3) since the intestine was covered only by a very thin amnionic tissue which would soon dry up as all umbilical cords do normally,



the intestine would not be covered by anything, resulting in peritonitis.

**Operation.**—Operation was begun at 9:45 a. m. Under drop ether anesthetic, the umbilical cord (amnion) was incised about 4 cm. from the umbilical ring and dissected free from the intestine. The patent omphalomesenteric duct was held gently by an assistant in order to prevent contaminating the exposed intestine. The omphalomesenteric duct measured 2 cm. in length, being 2 cm. in width at its attachment to the ileum and  $\frac{1}{2}$  cm. at its external opening. The duct was excised at its junction with the ileum and the opening into the ileum closed with two 00 chromic gut purse string sutures. Besides the terminal ileum, the cecum, the appendix and ascending colon were also within the hernia. By manual stretching, using the fingers, the umbilical ring was enlarged and the intestine replaced within the peritoneal cavity. The peritoneum was closed with chromic catgut No. 2 as a purse string on the inner surface of the umbilical ring. Next, the umbilical cord was severed at its junction with the skin. The fascia and skin were approximated with dermal through and through sutures. Vaseline gauze, plain dressing and abdominal binder were applied to the wound.

The patient was in fair condition upon return to the nursery. Heat was applied in form of blankets and hot water bottles. Hartman's solution, 50 cc., was administered subcutaneously three times daily for the first three days, then twice daily for two days. Beta lactose, half ounce, was given every two hours on the fourth postoperative day. Breast milk and similac were begun on the fifth postoperative day. However, on the fifth postoperative day, temperature rose to 101.4° F. and the face and lower extremities became edematous. Since the patient would not take his feedings freely and eagerly by mouth, feeding by lavage tube was instituted. The edema subsided and the temperature returned to normal, which makes one think that they were due to inanition. Since the sixth postoperative day the patient has steadily increased in strength and weight and at present appears entirely normal.

The pathological report of the tissue sent to the laboratory follows: Sections from umbilicus show squamous epithelial surface with fistulous tract opening in the center of the surface. The tract shows granulation tissue, mucosa of intestine and involuntary muscle of intestine. Diagnosis: Omphalomesenteric duct.

#### CONCLUSIONS

Conclusions to be drawn from this case are: (1) There is no apparent cause for hernia from history of pregnancy or delivery; (2) the umbilical cord was of average length and was not coiled around infant's neck, body or extremities at birth; (3) there is no sac in this type of hernia; (4) a radical cure by surgery is imperative at birth.

Professional Building.

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## HYPOGLYCEMIC TREATMENT OF SCHIZOPHRENIA AT FULTON STATE HOSPITAL

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The number of mentally ill patients is increasing from year to year. There are now approximately 7500 patients in the four state hospitals of Missouri. From 1935 to 1936 there was an increase of 277 patients and the admission rate is on an upward trend. The many building projects under way will, when completed, bring our hospitals up-to-date but will not provide for the increasing population of the future. An extensive preventive program together with more intensive treatment of patients admitted will have to be instituted to take care of the ever increasing number of mentally ill patients.

Schizophrenic patients constitute about 25 per cent of all first admissions to mental hospitals. Although the spontaneous remission rate of schizophrenia has been variously computed at from 20 to 40 per cent, the disease has a tendency toward chronicity with a comparatively low direct mortality rate. Therapeutic measures have up to the present been disappointing. Consequently about 70 per cent of all patients in hospitals for mental disease have dementia praecox.

No preventive measures have been discovered which will obviate the necessity of a cure, as in the case of smallpox. However, the insulin shock treatment as worked out in 1933 by Dr. Manfred Sakel of Vienna may be regarded as the greatest advance in psychiatric therapy since the malarial treatment of dementia paralytica, discovered by Wagner-Jauregg. Dr. Sakel reported high recovery rates, stating that in cases of less than six months duration it was possible to produce full remissions in 70 per cent. In addition 18 per cent could be sent home, although not fully recovered to their former mental health. Since then the literature has been filled with a numerous series of cases, both in this country and abroad, all with favorable results. We began the use of the Sakel method August 2, 1937.

#### CASE MATERIAL

The dementia praecox cases selected were all in good physical health. Insulin permits were secured from the nearest relative in each case. Thirteen subjects selected were men and eleven were women. The age distribution was from 16 to 36 years. In fourteen cases symptoms were of less than one year's duration and in nine cases the symptoms had been present for from thirteen to thirty months. One patient's illness was of six years' duration. Three cases gave a history of previous attacks.

#### TECHNIC

Insulin was given intramuscularly once daily to the fasting patient. The initial dose of from 10 to 20 units was increased 5 to 10 units daily until

coma was produced. The shock dose varied from 45 to 125 units, an average of about 75 units being required to produce coma. Six treatments were given each week, no insulin being given on Sundays. If there were no complications the patients were allowed to remain in coma from one half hour to two hours. The insulin reaction was then terminated by giving intravenous dextrose or by giving a sugar solution through the nasal tube. Regardless of the method in which the coma was terminated the patient was immediately given a meal. During the rest of the day he was permitted to carry on the usual hospital routine. The number of shocks given to any one patient varied greatly, depending upon the amount of improvement shown. One patient received only ten shocks and went home apparently recovered, while another received thirty-seven comas and was unimproved. The average number of shocks given was twenty-six.

Blood sugars taken while the patients were in coma ranged from 10 to 34 mgm. per cent. There was no consistent relationship between the amount of insulin given and the resultant blood sugar values. No correlation could be made between the dose of insulin given and the degree of hypoglycemia produced.

After the completion of the series of shock doses the insulin was not abruptly stopped but was administered in decreasing dosages of from 5 to 15 units daily, much as it was increased at the beginning of the treatment.

#### DANGERS

Because of the nature of the treatment great care and vigilance must be maintained throughout its course. Delayed hypoglycemic symptoms and the failure to recognize them constitute an outstanding danger. When the patient vomits or eats an inadequate meal symptoms of hyperinsulinism may occur several hours after the termination of the shock. Fortunately, none of our patients developed delayed hypoglycemic reactions. Convulsive seizures occurred rather infrequently. They were regarded as dangerous and the effect of insulin was immediately counteracted with intravenous dextrose and adrenalin. Two patients developed aspiration pneumonia. In each of these cases the shock had been terminated by nasal gavage. It is not known whether the patients aspirated mucus or vomited and aspirated some of the vomitus. The treatments of both patients were temporarily discontinued. Each made an uneventful recovery and was able to

Table 1. *Results*

Case	Age	Sex	Reaction Type of Dementia Praecox	Duration of Psychosis	Number of Shocks	Shock Dosage, Units	Weight Gain, Lbs.	Results
W. M.	29	M.	Catatonic	6 mos.	14	85	11	Apparently recovered
D. L.	20	M.	Hebephrenic	18 mos.	37	90	21	Unimproved
F. A.	27	M.	Catatonic	4 mos.	10	60	14	Apparently recovered
F. M.	36	M.	Paranoid	10 mos.	16	80	12	Apparently recovered
C. S.	34	M.	Hebephrenic	14 mos.	30	60	19	Apparently recovered
B. A.	26	M.	Paranoid	7 mos.	26	95	14	Apparently recovered
L. G.	26	M.	Hebephrenic	72 mos.	32	80	12	Improved
G. M.	23	M.	Paranoid	6 mos.	12	100	5	Apparently recovered
R. H.	23	M.	Paranoid	30 mos.	35	50	14	Improved
G. E.	33	M.	Paranoid	10 mos.	26	55	10	Apparently recovered
E. P.	24	M.	Hebephrenic	4 mos.	6	115	..	Died in shock from acute myocardial failure
N. I.	18	F.	Catatonic	8 mos.	31	65	16	Apparently recovered
E. L.	34	F.	Paranoid	18 mos.	33	45	22	Apparently recovered
C. B.	17	F.	Hebephrenic	9 mos.	31	50	6	Much improved
E. P.	32	F.	Paranoid	10 mos.	36	95	15	Apparently recovered
D. W.	20	F.	Hebephrenic	24 mos.	24	125	11	Improved
B. L.	30	F.	Hebephrenic	3 mos.	22	90	11	Apparently recovered
M. R.	17	F.	Hebephrenic	4 mos.	26	95	22	Improved
A. F.	22	F.	Catatonic	27 mos.	34	65	11	Much improved
D. C.	16	F.	Simple	6 mos.	15	65	7	Much improved
I. H.	22	F.	Paranoid	13 mos.	26	65	10	Much improved
S. B.	24	F.	Hebephrenic	13 mos.	29	65	27	Much improved
V. M.	22	F.	Hebephrenic	22 mos.	19	70	10	Apparently recovered
V. D.	25	F.	Catatonic	2 mos.	26	60	16	Apparently recovered



finish the hypoglycemic treatments without further complications. One patient went into a cardiovascular collapse one half hour after he had been given a sugar solution by nasal tube to end his shock. Dextrose was given intravenously and adrenalin and alpha lobelin were given subcutaneously. He responded only slightly and then become cyanotic. Oxygen was administered and artificial respiration applied. Finally when no pulse could be detected and no heart sounds were audible, adrenalin was given intracardially but without avail. The cause of death was given as acute myocardial failure during insulin shock. Unfortunately the relatives refused to grant a permit for autopsy. This patient received his usual shock dose of insulin (115 units) on the day of his death. It is possible that he may have developed a temporary hypersensitivity to it. Another factor that may have been contributory to his death was the temperature of our ward at the time, which was 72 degrees F., about 8 degrees cooler than usual.

#### RESULTS

Our results are classified as nearly as possible into four main groups as follow:

Group 1. Apparently recovered with full capacity for return to former work and no ascertainable defect. We say "apparently recovered" because the time under observation, from the time they finished treatment until they left the institution, is altogether too short to make a definite statement.

Group 2. Much improved with capacity for work and without definite psychotic symptoms, but with some ascertainable defect on examination.

Group 3. Improved cases, in some instances fit for discharge and with some capacity for simple work, but with definite psychotic symptoms.

Group 4. Unimproved or very slightly improved. In some of these cases there was enough subjective symptomatic improvement to have made the treatment worth while.

The treatment of one patient was interrupted by death. Of the twenty-three cases completing the treatment thirteen were apparently recovered, five were much improved, four were improved, and one was unimproved. Percentages are as follow:

Table 2. *Tabulation of Results*

Group	Per Cent
Apparently recovered	56.5
Much improved	21.7
Improved	17.4
Unimproved	4.4

The thirteen apparently recovered cases, four much improved cases and one improved case have been paroled home. Of these two suffered relapses and were returned to the hospital. When paroled one had been classified as much improved and the other as improved.

Our experience suggests a more favorable response in men than in women. Of the ten men who completed treatment seven, or 70 per cent, were classified as apparently recovered, while of

the thirteen women only six, or 46.1 per cent, were classed as apparently recovered.

Beneficial therapeutic results are not essentially determined by the length of the whole treatment. As previously stated one of our patients received ten shocks and went home apparently recovered while another received thirty-seven comas without improvement. There also seems to be no consistent relationship between the quality and severity of reactions to individual treatments and the therapeutic effects obtained.

All the patients seemed to improve in physical health during treatment and a weight gain was noted in every case. The average weight gain was 13.7 pounds per patient.

#### CONCLUSIONS

1. The results of the hypoglycemic treatment of schizophrenia has been encouraging although a longer period of time will be necessary before a definite opinion can be given.

2. The dangers of the treatment have been emphasized by the report of one death and serious complications in two other cases.

3. No discussion has been made of the possible mechanisms that may be responsible for the favorable behavior changes observed.

State Hospital.

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#### CYSTIC HYGROMA OF THE NECK

Since hygromas of the neck rarely develop in adults Bruce L. Fleming, Philadelphia (*Journal A. M. A.*, June 4, 1938), reports two adult cases that have been treated for this condition in the Jefferson Hospital since 1908 and in summary states that hygromas of the neck are thin-walled cystic tumors lined with endothelium and containing lymph. They grow from lymph sacs or buds that appear, in embryologic development near the junction of the internal jugular and subclavian veins. The endothelial cells lining these tumors are structurally different from and thicker than those lining lymphatic capillaries. They are structurally the same as blood capillary endothelial cells, which they resemble functionally, for they apparently produce the contained lymph. Evidence of phagocytic power is negligible. The treatment is complete surgical excision or partial excision and packing.

## THE NEUROSES

JAMES F. McFADDEN, M.D.

ST. LOUIS

Everyone has heard the oft repeated sentences: "My nerves are tense." "My nerves are taut." "My nerves are frayed." "My nerves are unstrung." "Oh, I'm so nervous," and many other variations.

What is meant by these expressions? Is there a physical disturbance in the nervous system? The answer is, "No." These are merely figures of speech, labels which the average person uses to designate a group of feelings and reactions for which he has no other name. His nerves are not stretched, they are not frayed, they are not unstrung. In fact, they are exactly the same as the nerves of other persons who are known to be quite calm and perfectly well. Such a condition is known to the physician as a neurosis.

Nervous disturbances or ailments may be classed as organic or functional. The organic ones are those in which there is a disease, injury or lack of development of some part of the nervous system. A tumor may by pressure cause destruction to nerve cells within the brain. A disease such as infantile paralysis causes inflammation and destruction of certain parts of the nervous system. A blow sustained in an accident may injure nerve or brain structure. These are known as organic nervous diseases.

The other class is composed of abnormal reactions of the nervous system, even though there is no injury or disease to nerve structures.

These disturbances in function without changes in structure are known as functional nervous diseases. You may ask how there can be a disturbance in function without a change in structure or how a machine can have a disturbed action without a physical cause. A machine may be mechanically perfect and not function normally because the operator is not adjusting it properly. Likewise the nervous system may be structurally perfect, yet the mind may be failing in the proper control or adjustment. Thus, disorders in which mental forces or ideas of which the individual is aware or even unaware, bring about varied mental and physical symptoms which are called neuroses.

Again you may ask, "How can forces of which I am not aware bring about such mental and physical reactions?" Most of our mental and physical reactions throughout the day are thus brought about. We walk or drive along the street performing numerous complicated movements, avoiding many dangers and reacting in emergencies without being fully conscious of them. We act automatically or instinctively, always to protect ourselves. Every organ or structure of the body is attuned to react in a manner to protect our well-being.

Often it has been repeated, "Self preservation is the first law of nature and the second is the preservation of the race or species." In the main these laws are followed without our being fully aware.

Anything threatening our mental or physical well-being brings into play these forces. A difficult economic or social problem, an actual or imagined disturbance in any of our body organs or functions which in our own minds handicaps us or even threatens our ability to fulfill these laws of nature, may bring about physical or mental reactions, either conscious or unconscious, which result in the group of symptoms called "nervousness," "tense nerves," "taut nerves," "unstrung nerves," or even "nervous break down," but correctly known as a neurosis.

The law of self preservation not only applies to our physical comforts and safety but also to our spiritual or religious well-being. A large proportion of thinking men believe in a Supreme Being, a Creator and in a life hereafter. Many who scoff exteriorly or express disbelief, consciously or subconsciously have some spark of religious faith. Therefore religion must have a place when we consider the neuroses. Whenever something arises which jeopardizes our assurance of gaining the goal of eternal happiness, we consciously or unconsciously react with the self preservation instinct. Many a person believed to be irreligious has had a neurosis cured by religious readjustment.

The remote causes of the neuroses may be considered as unfavorable early home life, constitutional predisposition, chronic disease and conflicts of varying types.

The most common exciting or precipitating factors are mental or physical fatigue, accidents with or without physical injury, operations, acute or chronic illnesses or in short any conflict which through fear, worry and physical or mental stress causes fatigue. Experimentally scientists have proved that the emotions have a definite influence through the nervous system upon the other organs or systems of the body. Let us classify the emotions into two main groups, the positive and negative. The positive emotions are those which we experience as pleasing and which put no strain upon the body mechanism. The negative ones are those which bring about defensive reactions.

Let us consider the negative emotions, the ones which cause so much havoc and contribute much toward the causation of neuroses. Experiments have shown that normally an animal when given food will react automatically with an increase in flow of digestive juices and an increase in movements of the stomach, intestines and other digestive organs. These will function in a normal way in the presence of positive emotions. If a negative emotion is brought into play the normal digestive functions will be slowed down, stopped or even reversed depending upon the severity of the emotion. A classical experiment has shown that a normal dog, when given food, reacts by an increase in



flow of digestive juices within the stomach. A similar reaction was noted if the dog was shown food. If the dog was shown or given food, or if in any other way the digestive juices were caused to increase, then suddenly his common enemy the cat confronted him, he immediately became tense and the digestive juices ceased to flow and the digestive functions were slowed or stopped.

Man undergoes the same type of reaction whenever anger or any other negative emotion is present. This reaction is not limited to the digestive system for there is an increase in heart beat, the muscles become tense and other bodily reactions take place. When this occurs in a dog he will lie down and relax before taking food. Man, a creature of habit, no matter how much keyed up, how much aroused emotionally, will eat whenever a whistle blows, a bell rings or a meal time is at hand. As a result he takes food when his body is not ready to handle it properly. Food is in the stomach without the necessary amount of digestive juices being present. The result is a condition which he calls indigestion. Gas forms within the stomach and intestines causing pain and discomfort. Some of this pain being in the left side, it is interpreted as heart trouble especially when an increased heart beat is noted. If this can occur following one emotional stress, just think what may happen to a person under a long continued stress due to financial or business worries, marital worries, fear of physical disease or injury, religious worries or any other situation which will cause a continuous tension or emotion of the negative type. It is needless to detail how physical and mental fatigue, prolonged illness, injuries and other factors may aggravate such a condition. In such a state incoming sensations and mental experiences are magnified. The state of fear or apprehension impairs the judgment somewhat thereby causing a disturbed insight and an improper evaluation of the symptoms. Thus in a general way you can see how a neurosis comes about. Its symptoms and other reactions are too multiple to attempt enumeration; instead we will consider a few typical cases of the three main groups of the neuroses. These three major groups are neurasthenia, psychasthenia and hysteria.

#### CASE REPORTS

A young lady accompanied by an over solicitous mother consulted a physician. She complained of being nervous along with the train of complaints which accompany being nervous. All complaints centered about her digestive functions. The one thing which had fixed her attention upon this was that she became quite ill whenever she ate frankfurters. At one time she ate some of these and due to an unknown reason became quite sick and experienced numerous unpleasant symptoms. Thereafter, whenever she partook of this specific article of food she suffered in a like manner. This led her to believe that there was something wrong with her digestion and thence followed a concentration of her thoughts upon her digestive functions and the accompanying so-called nervous reactions. Otherwise her digestion was normal and physically she was normal. What caused her trouble? Careful inquiry disclosed that every

time she ate frankfurters her mother would say, "Now you know that they will make you sick." She immediately became apprehensive, the digestive juices were decreased and she was unable to digest the food properly. The result was a severe case of indigestion with accompanying nervous symptoms. One day when she visited her physician unaccompanied by her mother, he advised her to eat frankfurters at the following noon-day meal but not to tell her mother she was going to do so. She was assured that she would be able to eat these and enjoy them with normal digestion. The following day she ate frankfurters without any untoward effects and thereafter enjoyed eating them whenever she chose to do so. This case demonstrates the power of suggestion and how a negative suggestion can upset the emotions and disrupt the normal physiological functions.

Case 2. A very intelligent young man had a good position and a promising future. In his spare time he indulged in baseball and football with the enjoyment of the average healthy young man of his age. At one time he gained the impression that there was something wrong with his heart. He became fearful and concentrated his thoughts upon his heart and immediately stopped all forms of unnecessary exercise. This gave him much spare time to think and worry about himself and as a result his digestion was impaired. The pains caused by indigestion were interpreted as pains in the heart. The worry caused increase in his heart beat which he also interpreted as heart trouble. These worries and increased heart beat caused increased breathing, which he also thought was due to heart trouble. Due to worry and disturbed digestion he lost weight continuously. This, plus his worry, interfered with his ability to carry on at work and he was compelled to discontinue his employment. With more time to concentrate upon his physical disabilities, and more time to worry over them, you can see how he would become worse. His anxiety caused his heart to beat fast, he breathed rapidly, his appetite became less, he was unable to sleep and, because of tension, he used up so much energy that this, plus his general weakened state, easily fatigued him. There is no wonder that he developed headache and a tight feeling over his scalp along with many more distressing symptoms. Thus a small object gathering volume and speed as it rolls down a mountain side may cause havoc when it reaches the bottom. After constant assurance he was convinced that his heart was normal and then followed the slow building up of his forces which had been so needlessly torn down. He ultimately recovered but had lost a good place of employment and many months of his youth because of neurasthenia, caused by an unnecessary and unfounded worry.

Case 3. Mr., Mrs., or Miss, Anyone who, due to financial, marital, physical or religious worries becomes apprehensive. He or she loses interest in all else but self and the magnified problem at hand. Because of this there is lack of concentration in work, reading, studies or other endeavors and as a consequence articles read, work done and other things cannot be recalled. This is due to the attention being diverted from the object at hand. One cannot get a good photograph from an imperfect negative. The individual concerned, however, interprets this as a failing memory. He or she as a consequence concentrates upon analyzing every thought with the result that numerous strange, bizarre, or decidedly unconventional thoughts are encountered. These are interpreted as signs of insanity thus leading to the fear that one is going to become insane. This fear brings about bodily reactions previously described as having been caused by negative emotions.

The individual experiences awful thoughts or compulsions to do unconventional things. He or she is suffering from psychasthenia. Little does one realize that

he or she is magnifying or concentrating upon normal thought reactions, therefore misinterpreting them. They do not recognize that everyone experiences thoughts which are not printable and that a normal person is one who having such thought is able to disregard them and carry on in a conventional manner. While the neurasthenic magnifies into abnormality physical functions, the psychasthenic does the same to the psychic functions.

Case 4. John X appeared to be a normal young man. He was within the upper third of his class in both grammar and high schools. He had just finished college near the head of his class. He was accepted for his physical and mental qualifications as a promising candidate for a commission in the Officers Training Camp during the World War. He was patriotic, energetic, bright, not a shirker but always willing to do even more than his share. He was ideal material for the making of an officer of the United States Army and he did become a very capable and efficient officer. His outfit was ordered to the front and in due course of time, was under fire. Lieutenant X began to experience a sense of fear. Being brave he suppressed this fear and carried on, but he had not reckoned with the instinct of self preservation which often functions in spite of one's conscious efforts against it. He saw his comrades maimed and returned to a zone of safety for hospitalization. He thought he had overcome this feeling of fear, which is a normal reaction in normal individuals. Many things were happening so rapidly and requiring his attention that he had crowded fear out of his consciousness. However, the body mechanisms, both psychic and physical, were striving for self preservation. Suddenly a shell exploded near by. Everything was blank for a time and upon regaining consciousness, he was lying upon the ground unable to move his legs. He was paralyzed. Routinely he was returned to the rear and hospitalized in a zone of safety. Upon careful examination it was found that he showed no discernible evidence of physical injury. Exhaustive examinations elicited no evidence indicative of organic changes in the nervous system. He had developed a condition known in civil life as a functional paralysis or hysteria. In military terminology he was classified as a case of "shell shock." A better term is "war neurosis." He conscientiously believed that he could not use his legs.

This continued for months after the armistice until one day a physician, who had specialized in this branch of medical practice, conclusively demonstrated to him that he could use his lower extremities. He was not a "faker," a "malinger," or a "slacker," but this was a true case of hysteria. Hysteria occurs in this and other forms in civil life, but is often not properly understood, therefore is misjudged and not properly treated.

Time does not permit our consideration of a more varied group of neuroses, therefore we must close our discussion hoping that these brief remarks may be of some help to the understanding or partial understanding of what is meant by the neuroses.

Let us be more understanding, more tolerant and more helpful to the "forgotten man or woman," the one who is afflicted with a neurosis.

940 Missouri Building.

I. S. Wechsler, New York (Journal A. M. A., June 4, 1938), believes that the whole concept of multiple neuritis is in need of revision, and the very term as used in most of the cases now so designated is a misnomer. In the vast majority of cases, whether the condition is due to a toxin, foreign poison or avitaminosis, there is a degenerative and not inflammatory process.

## RUBELLA AND ENCEPHALITIS

ALBERT S. WELCH, M.D.

KANSAS CITY, MO.

The following case report of encephalitis associated with rubella brings the total number of cases reported in the literature to nineteen.<sup>1</sup>

### REPORT OF CASE

Mary Jane, white, aged 24, was first seen July 24, 1937, at her home. Three days earlier she and other members of the family had had diarrhea which they attributed to something they had eaten. The other members of the family recovered but she, after temporary improvement, became dizzy, weak and nauseated and had to go to bed. The diarrhea ceased. Examination revealed nothing noteworthy except slight rhinitis. The following day dizziness and anorexia were pronounced and she complained of uncomfortable stiffness of the neck muscles but had no Kernig or Brudzinski signs. White blood count was 6700 and urine revealed nothing noteworthy. There was no eosinophilia. The following day a macular rash appeared, showing first on the upper part of her chest. There were no Koplik spots and no noticeable change in the mucous membrane of the eyes. At this time a barbiturate-ephedrine combination was administered in small doses.

The rash spread and became scarlatiniform, lasting a few days then gradually disappearing with slight, if any, desquamation. Because of the persistent anorexia, weakness, vertigo, stiffness of the neck and an occipital headache that had developed gradually, the patient was sent to St. Joseph Hospital on July 29 where the first fever of 99.4 degrees was recorded. At one other time only, the following afternoon, was the temperature above 98.6 degrees, when it went to 99 degrees.

Spinal puncture was done July 29 and her headache and dizziness improved for about thirty-six hours. The initial pressure registered 8 mm.; it rose to 9 mm., with left, and 10 mm., with right, jugular compression. The fluid was clear and unchanged, the cell count less than 4 and tests for globulin, the Wassermann and colloidal gold curve failed to yield evidence of disease. Her pulse rate was within low normal limits and her respiratory rate and blood pressure were unaffected during the period of observation.

Blood Wassermann, Kahn and Kline tests were negative. Her sedimentation rate was 20 mm. (cell column, 18 mm. average is normal) in one hour; the packed cell volume was 38 per cent and the sedimentation index 8. Chemical analysis of her blood revealed nonprotein nitrogen 38.8, uric acid 2.5, creatinine 1.3, sugar 95.2 and chlorides 478. Repeated blood counts revealed the white blood cells between 5600 and 4500, the polymorphonuclear leukocytes between 83 and 66 per cent, non-filamented cells 4 per cent, hemoglobin 69 per cent, red cell count between 3,480,000 and 3,560,000. There were no eosinophilic cells. The coagulation time was 2½ minutes. Repeated urinalysis revealed nothing noteworthy except traces of albumin, a few leukocytes, bacteria and an occasional Trichomonas organism.

The patient was discharged from the hospital on August 2, 1937, but at the time of this writing, September 1, 1937, she had not recovered completely although she is able to be up and about.

Although her parents believed that she, together with the other children, had measles as a child they could not remember her having them twice. She had enjoyed exceptionally good health up until this time.

919 Rialto Building.

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JULY, 1938

## EDITORIALS

### COUNCIL OPPOSES ENLARGEMENT OF STATE CANCER HOSPITAL

The Council of the Missouri State Medical Association held a telephone conference on June 5 to consider the question of the enlargement of the State Cancer Hospital to 120 beds and the seeking of federal funds from the Public Works Progress Administration for that purpose.

The result of the conference was a letter to Mr. F. T. Hodgdon, Hannibal, Chairman of the Cancer Commission, protesting against the enlargement and making the institution a general hospital. The following conclusions were stated in the letter:

(1) The State Cancer Hospital should not be enlarged at this time; (2) the State Cancer Commission be requested to reconsider its approval of the proposed enlargement of the State Cancer Hospital, and (3) the State Cancer Commission be respectfully requested to extend the privilege of a hearing to the officers and Councilors of our Association whenever a proposal to enlarge the facilities of the State Cancer Hospital is to be considered.

Copies of the letter were sent to Hon. Lloyd C. Stark, Governor, members of the Cancer Commission and members of the Committee on Cancer of the State Association.

Participating in the conference were Drs. Curtis H. Lohr, St. Louis, Chairman of the Council; A. S. Bristow, Princeton; H. B. Goodrich, Hannibal; R. B. Denny, Creve Coeur; William A. Bloom, Fayette; A. J. Campbell, Sedalia; E. P. Heller, Kansas City; H. L. Kerr, Crane; E. C. Bohrer, West Plains; E. J. Nienstedt, Sikeston; B. W. Hays, Jackson, and James R. McVay, Kansas City.

### SAN FRANCISCO SESSION OF THE AMERICAN MEDICAL ASSOCIATION

The 1938 Session of the American Medical Association was the fifth one to meet in San Francisco, the last session held there being in 1923. The registration at the 1923 session was 3726 while over 6000 Fellows registered at the 1938 Session. The

membership of the Association in 1923 was 88,159; today it is 109,435, the largest number ever recorded in the history of the organization.

In the House of Delegates the Missouri State Medical Association was represented by Drs. Carl F. Vohs, St. Louis; James R. McVay, Kansas City; A. R. McComas, Sturgeon, and H. L. Kerr, Crane. Dr. E. H. Skinner, Kansas City, was a delegate from the Section on Radiology. Also attending the sessions of the House of Delegates were Drs. W. H. Breuer, St. James; O. B. Zeinert, St. Louis, and Mr. E. H. Bartelsmeyer, St. Louis, Assistant Secretary. Ninety-five Fellows attended from Missouri.

St. Louis was chosen as the place of meeting in 1939, New York in 1940 and Cleveland in 1941. For the 1939 Annual Session invitations were extended by St. Louis, Chicago, Philadelphia, Detroit and Atlantic City. On the first ballot St. Louis received 76 votes which was not a majority of the 161 votes cast. Detroit having received the lowest number of votes was dropped from the list and Philadelphia withdrew. On the second ballot St. Louis received a majority of the votes. Dr. Carl F. Vohs, St. Louis, presented the invitation from St. Louis on behalf of the Missouri delegation. For 1940 the contenders were New York, Philadelphia and Atlantic City; for 1941, Cleveland, Chicago and Minneapolis-St. Paul. The contest was spirited because places of meeting were chosen for three years in advance. In 1939 the meeting place for 1942 will be selected. Other delegates who assisted the Missouri delegation in obtaining the 1939 Session were Drs. J. F. Hassig, Kansas; W. Albert Cook, Oklahoma, and Roy W. Fouts, Nebraska. Mr. F. H. Rein, Manager of the St. Louis Convention and Publicity Bureau, was in attendance with data on convention facilities of St. Louis, now so important for properly handling a session of the American Medical Association.

Dr. James R. McVay, Kansas City, was appointed by the Speaker to serve as a member of the Committee on Credentials. Dr. Carl F. Vohs, St. Louis, was appointed as a teller for the Session and Dr. E. H. Skinner, Kansas City, was appointed a member on the Reference Committee on Sections and Section Work.

The resolution adopted by the House of Delegates of the Missouri State Medical Association at the Jefferson City Session requesting the President of the American Medical Association to appoint a special committee to conduct a study of American spas and health resorts was introduced by Dr. Vohs and was referred to the Reference Committee on Hygiene and Public Health. The House of Delegates did not adopt the resolution because the Association is already engaged in such a study the results of which will soon be available to physicians.

A resolution to establish a Hall of Health—a traveling medical exhibit—for display through the nation was referred to the Board of Trustees.

A resolution known as the Indiana Plan, "An Antidote for State Medicine," was approved in principle. This plan is similar to the recommendations

submitted by the Missouri State Medical Association Committee on Postgraduate Course and approved by the State Medical Association at the Jefferson City Session. The Indiana Plan follows:

#### AN ANTIDOTE FOR STATE MEDICINE

Frequently today the physician finds articles in the press questioning his efficiency and his methods of practice. Such articles accuse him of ignoring preventive medicine in his daily work. He is bewildered and defensive in his attitude for he feels that he is doing his job well. Even superficial observation will disclose the marked drop in death rate as a result of measures instituted by the medical profession in controlling tuberculosis, malaria, typhoid, diarrhea, yellow fever, puerperal sepsis and other infectious diseases. Preventive medicine is now being practiced by all physicians as private practitioners to some degree. In many parts of the state, county medical units have a definite program. The time is ripe to correlate these scattered activities, survey our local situations and acquaint the public with the extent of this phase of our work.

Many phases of preventive medicine have advanced by stimulation from outside groups. Drives have been sponsored with much misunderstanding. Preventive medicine has now reached its maturity and should be utilized to the fullest by organized medicine and by the individual doctor. It is futile for one county or state to try to promote this alone. Disease and disaster are not aware of state borders. A national policy on the part of organized medicine is needed now.

Too long have we kept our light under a bushel. It is time to take the offensive. The amount of preventive medicine can be increased by the private practitioner with definite benefit to his community and to himself, and the public will be made to realize that American medicine is pliable enough to continue as an individualistic enterprise.

Throughout the ages, medicine has adapted itself to social changes. We are now in one of those states of changing social customs and aspirations. The American public looks to organized medicine for leadership. Prevention of disease, early recognition of defects and diseases, reduction of hazards and prolongation of life are the important functions of a physician.

In Indiana we have visualized preventive medicine as a wheel with each spoke representing some important phase. Each phase is featured as a "Topic of the Month" in *The Journal of the Indiana State Medical Association* and is announced or discussed in each county medical society the month the subject is featured. The topic of the month is given support in the press and is discussed by speakers before medical and lay groups.

#### TOPICS OF THE MONTH

January—Formulation of Plan.  
February—Syphilis.  
March—Pneumonia.  
April—Diphtheria.  
May—Maternal and Child Health.  
June—Crippled Children.  
July—Highway Accidents.  
August—Occupational Diseases.  
September—Annual Physical Examinations and Heart Disease.  
October—Conservation of Eyesight.  
November—Tuberculosis.  
December—Smallpox.

#### PURPOSE

To promote aggressive leadership by organized medicine in prevention of disease and early detection of defects.

To incorporate preventive medicine as an important phase of private practice and of county medical activity.

To promote a national health program with emphasis on prevention of disease sponsored by American Medical Association with due regard for local situations.

Our modern age demands cooperative efforts by organized medicine to distribute modern medicine.

#### DIVIDENDS OR RESULTS

1. Create good will and public approval.
2. Raise general standard of medical practice.
3. Prevent many deaths and much suffering.
4. Give a better ordered life for the doctor.
5. Give a steadier income for the doctor.
6. Intelligent defense against disease is our best defense against government encroachment.

#### ALTERNATIVE

Noisy and aggressive lay groups will seize leadership and we will trail behind, cloaked with heavy governmental supervision.

The film "The Birth of a Baby" was endorsed for its educational value with the recommendation that its showing be limited to adults in counties where the county medical society approves the picture.

A resolution proposing the creation of a Council on Medical Care was not approved with the explanation that the Board of Trustees is considering the appointment of a special committee under the same name.

The Association voted to oppose all legislation which would restrict animal experimentation and urged all state associations to assist in an educational campaign emphasizing the humane use of animal experimentation in research and saving human life. The resolution was referred to the Board of Trustees.

The House of Delegates requested the Council on Foods to reestablish its rules on butter and dairy products.

The House approved in principle the establishment of the Rockefeller Cancer Control Fund on condition that a majority of the members of the advisory council be members of the American Medical Association.

A resolution to prohibit the sale of sulfanilamide over the counter without a physician's prescription was approved.

A resolution requesting the establishment of a policy outlining the ethical and unethical features of fee schedules was referred to the Bureau of Medical Economics for study and report at the next Annual Session.

The name of the Bureau of Health and Public Instruction was changed to the Bureau of Health Education.

The following report of the Judicial Council with reference to the rental of radium was adopted:

#### RENTAL OF RADIUM

A widespread practice of renting radium for the treatment of patients by physicians not owning or being experienced in the use of radium has caused considerable discussion during the past year. Ordinarily instructions in the technic of the use of the radium are sent by the person furnishing it. Sometimes the radium is



furnished by a commercial concern, sometimes by a physician owning it. The advisability of the use of such a powerful agency by those not trained in its use and the ethics involved of prescribing and directing its use by a person who has not examined or seen the person on whom it is to be used has come before the Council. As a result of a rather extensive correspondence both from those favoring its use as described and those opposed, the Judicial Council is of the opinion that the prescribing and directing of its use in the case of a patient whom the prescriber has not examined or seen is an unethical medical procedure. The Council recognizes that advice and help in difficult cases is often furnished by those in a position to be of possible or probable assistance but it believes that the great dangers accompanying the use of radium removes that particular remedy from the field of advice without personal contact with the patient.

The report of the Judicial Council concerning the relationship of physicians and cultists was adopted and the Secretary instructed to bring this report to the attention of all constituent state associations. The report follows:

#### PHYSICIANS AND CULTISTS

Many inquiries concerning the relations of the various cults to the regular profession have been received. The inquiries pertain particularly to the osteopath and the optometrist. Some of our members are giving lectures in osteopathic and optometric schools and addresses before their societies. Some members are associated by a common waiting room in offices with them. Some members are by mutual agreement professional associates principally in the field of surgery. There are some instances of partnership in practice. All of these voluntarily associated activities are unethical. Such relations certainly do not "uphold the dignity and honor of (our) vocation" or "exalt its standards." In case of emergency no doctor should refuse a sufferer knowledge or skill which he possesses to the sufferer's harm but this is quite a different matter from that of a consultant or practitioner who by consulting or practicing with him assists a cultist to establish himself as competent and on the same basis of medical knowledge as a doctor of medicine. By the very nature of the education and training of each, a consultation with a cultist is a futile gesture if the cultist is assumed to have the same high grade of knowledge, training and experience as is possessed by the doctor of medicine. Such consultation lowers the honor and dignity of the profession in the same degree to which it elevates the honor and dignity of the irregular in training and practice. Practicing as a partner or otherwise has the same effect and objection. Teaching in cultist schools and addressing cultist societies is even more reprehensible, for such activities give public approval by the medical profession to a system of healing known to the profession to be substandard, incorrect and harmful to the people because of its deficiencies. There hardly can be a voluntary relationship between a doctor of medicine and a cultist which is ethical in character.

The report of the Committee to Study Contraceptive Practices and Related Problems was endorsed as follows:

It is not the function of the American Medical Association to tell physicians what therapeutic advice they shall offer patients. However, it has been its policy to investigate various procedures, devices and drugs, and to publish the results of such studies in its official publications for the information of the profession.

The instructions to the Council on Pharmacy and Chemistry and the Council on Physical Therapy to investigate further the materials, devices and proced-

ures used for the purpose of contraception do not indicate any change in the usual policy of the Association, nor do they constitute an endorsement by the Association of contraceptive practices.

Rigid visual standards for granting of automobile drivers' licenses were recommended for adoption by the several states.

A resolution requesting that the Association establish standards for testing alcoholic intoxication was referred to the Board of Trustees for study and report at the next Annual Session.

A resolution denoting the teaching by physicians in schools of chiropody as unethical was laid on the table with the explanation that further study of this complex problem is needed.

Resolutions requesting the employment of public relations counsel and the appointment of a committee on public relations were not adopted with the explanation that these contacts are now being maintained.

A resolution suggesting legislation to authorize the giving of contraceptive advice by physicians to patients by mail was referred to the Board of Trustees.

The Association reiterated its recommendation that a Federal Department of Health be established with a medical practitioner at its head.

The report of the Bureau of Medical Economics was adopted including two proposals as a solution to the problem of medical service in group hospitalization contracts, as follow: (1) Restrict the benefits of the contract exclusively to the use of hospital facilities such as bed and board, operating room, medicines, surgical dressings and general nursing care; and (2) pay cash benefits directly to the insured for all medical services.

An address on "Work of the Interdepartmental Committee to Coordinate Health and Welfare Activities of the Federal Government" prepared by Josephine Roche, Chairman of the Committee, was presented by Dr. Warren F. Draper, Assistant Surgeon General and delegate from the United States Public Health Service. The address appears on page 258 of this issue. The address was referred to the Committee on Executive Session which reported as follows:

Your Committee believes that it expresses the sentiment of the House of Delegates in saying that we are glad to have received a communication from the Chairman of the Interdepartmental Committee, Miss Josephine Roche. It is particularly welcome since it is the first official communication that the American Medical Association has received from this important governmental committee.

We note with interest that studies have resulted in the coordination of health activities involved in the Public Health Service and the Department of Labor and the Children's Bureau. We trust that future results will bear out the promise of increased efficiency. Possibly the most interesting data quoted are those which would indicate a much higher rate of sickness in the sub-economic group. This raises the question whether the economic factor involved is not of greater importance than is the lack of medical care in cause of illness. The address contains many interesting statements regarding medical care some of which are at

variance with data accumulated in the files of the Bureau of Medical Economics. Although your Committee agrees in principle with many of the objectives which the Interdepartmental Committee had in view, nevertheless, there may be some danger involved in their execution. We have in mind for example the disposition of huge sums of money to the care of certain specified diseases. Experience has shown that such action may produce a lack of balance in the entire program for medical care which could retard rather than expedite the progress.

Your Committee emphatically agrees with the statement in the address which reads: "No one formula or program can possibly be found adequate to meet the varied needs of medical care."

Your Committee notes with satisfaction that a group of physicians have been invited to take part in the discussions of the forthcoming National Health Conference and that it includes some of the officers of the American Medical Association. This will make available a vast amount of information concerning the subject involved which has been accumulated over a period of years including the result of our survey of medical service. We are confident that our official representatives will be guided by the principles and opinions that have been repeatedly expressed by the House of Delegates.

The report was unanimously approved by the House of Delegates.

Dr. J. H. J. Upham, Columbus, presided at the Session, and Dr. Irvin Abell, Louisville, was installed as President to serve at the 1939 Session.

Dr. Rock Sleyster, Wauwatosa, Wisconsin, was elected President-Elect. Dr. Sleyster is 58 years old and was graduated from the University of Illinois College of Medicine, Chicago, in 1902. He was secretary of the State Medical Society of Wisconsin from 1914 to 1923 and president in 1924. He has been treasurer of the society since 1925. Dr. Sleyster was editor of the *Wisconsin Medical Journal* from 1918 to 1923.

In the American Medical Association he was a delegate to the House of Delegates from the State Medical Society of Wisconsin from 1915 to 1926. He was a member of the Board of Trustees from 1926 to 1937 and was chairman of the Board during the last two years of his service.

Dr. Sleyster is medical director of the Milwaukee Sanitarium at Wauwatosa. He is a fellow of the American College of Physicians and a member of the American Psychiatric Association, the Association for Research in Nervous and Mental Diseases and the Central Neuropsychiatric Association.

Other officers elected were: Secretary, Dr. Olin West, Chicago (reelected); Speaker of the House of Delegates, Dr. Harrison H. Shoulders, Nashville; Vice Speaker, Dr. Roy W. Fouts, Omaha; Treasurer, Dr. Herman L. Kretschmer, Chicago (reelected).

Dr. Fred W. Bailey, St. Louis, was selected to serve as vice chairman of the Section on General and Abdominal Surgery, and Dr. Jean V. Cooke, Kirkwood, as vice chairman of the Section on Pediatrics. Dr. Sherwood Moore, St. Louis, received a certificate of merit for his exhibit illustrating body section radiology.

Dr. Rudolph Matas, New Orleans, was chosen by the House of Delegates as the first recipient of the distinguished service medal for "meritorious services in the science and art of medicine" created by the Association in 1937.

## THE CARBOHYDRATE HORMONE OF THE PITUITARY GLAND

For many years interest has been focused upon the pituitary gland. It has been called the motor gland of the animal economy. Whether it actually makes the human being function, as would be implied by this term, may be open to some question. That it secretes hormones which produce definitely demonstrable effects is not open to question. Abundant clinical experience has confirmed the existence of hormones having to do with growth, sexual development and function. Isolated clinical experience proves the existence of lactogenic and thyrotropic hormones derived from the pituitary gland. Laboratory investigation has evidenced a diabetogenic hormone. Thus far, there have been no clinical experiences which might serve to utilize this knowledge in the control or treatment of human disease.

Only a few years ago the interest of the medical world was focused upon the experiments of Long and his coworkers who showed that the injection of estrogenic substance inhibited the diabetogenic activity of the pituitary gland. Joslin hailed these investigations of the laboratory as possibly the forerunner of a new era in diabetic management. Unfortunately clinical application has not yet been found for these brilliant results of the laboratory. The injection of estrogenic substance is apparently without effect upon the course of human diabetes. Interest waned. Fortunately laboratory investigation has not stopped.

Numerous students continued their attack upon the problem.<sup>1</sup> Even yet their studies yield no reason for believing that eventual application of the knowledge concerning the pituitary hormone can be utilized in the treatment of diabetes. The problem is complicated. The anterior lobe of this gland secretes a hormone which has to do with the metabolism of carbohydrate. The posterior lobe secretes a hormone which has to do with metabolism of carbohydrate. Even more disconcerting, injury to the hypothalamus, that portion of the brain lying in closest proximity to the pituitary gland, also exerts an influence upon carbohydrate metabolism. Injury to this portion of the brain in surgical experiments involving the pituitary are common. Puncture of the hypothalamus alone may inaugurate polyuria and glycosuria.

A host of investigators have been concerned with the interrelationship of the pituitary body and the pancreas and clinical diabetes. In general removal of the pituitary induces a state of increased insulin

1. Van Dyke, H. B.: *The Physiology and Pharmacology of the Pituitary Body*, Chicago, University of Chicago Press, 1936.



sensitiveness in an otherwise normal animal. Hypoglycemic blood sugar levels are easily produced. Likewise, hypoglycemic blood sugar levels follow hepatectomy as Mann demonstrated. In the latter event, death speedily follows unless considerable amounts of glucose are injected. If hypophysectomy precedes or follows upon pancreatectomy, the experimental animal may live for a considerable period without developing the symptoms of clinical diabetes.

There is no agreement concerning the anatomic alteration of the pituitary gland in either human or experimental pancreatic diabetes. A reduction in the weight of the gland is generally accepted. But investigators are divided as to whether there is an increase or a decrease in the number of acid staining cells and whether anatomic changes are entirely confined to the anterior lobe. Since there is experimental evidence that extracts of the other portions of the gland can lead to hyperglycemia this difference in point of view is not surprising.

These observations are cited merely to demonstrate the complexity of the problem which assails the modern investigator into the pathogenesis of diabetes. More recently diabetic-like states or elevation of the blood sugar have been reported following the injection of various pituitary extracts, most of them derived from the anterior lobe.

A hopeful note has recently been given to the whole matter. Bergman and Turner<sup>2</sup> after a series of carefully controlled experiments have proposed a standard for the measurement of the diabetogenic hormone of the anterior lobe of the pituitary gland. They injected an acetone-insoluble, alkaline alcohol-soluble extract of the anterior lobe of sheep into normal guinea pigs.

They found that under certain conditions considerable elevations of blood sugar followed these injections. The degree of elevation was roughly proportional to the amount of gland substance injected and the interval after injection until blood sugar estimations were made. Maximum effects were noted eight hours after the injection. They define a guinea pig unit of the hormone as that contained in the minimum amount of extract which when injected intraperitoneally into well nourished young guinea pigs of specified weight will cause after eight hours an increase of 50 per cent in the blood sugar content of five or more animals. The evaluation of this pituitary hormone in terms of units may be expected to lead to further knowledge perhaps of definite clinical application.

Bergman and Turner furnish an observation which may be of some significance in the treatment of human diabetes. They found that in poorly nourished animals or in those which were failing to gain weight the injection of extract active in other animals failed to produce an elevation of the blood sugar. Animals in poor nutritive condition or not

eating well showed a depletion of liver glycogen, in some cases amounting to only 10 per cent of the normal. It may be assumed that obese animals would have shown a greater response to the injection of the diabetogenic hormone than did the normal animals. Indeed, such an experiment would be of the utmost interest for a further understanding of the therapy of human diabetes. But even on the basis of the incomplete evidence at hand it would seem that in human diabetes the pituitary diabetogenic hormone (if it is eventually shown that one is secreted in the human being) is partially neutralized by the maintenance of a somewhat subnormal weight. In any event, if it can be proved eventually that the effects of the diabetogenic pituitary hormone are aggravated in the obese person, the reason for the greater frequency (and severity) of diabetes in the overweight individual will become clear.

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## NEWS NOTES

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Dr. Otto H. Schwarz, St. Louis, was given a testimonial dinner on May 21 in commemoration of his twenty-fifth year as a teacher in Washington University. Eighty-two members of the profession, many of them his former students, were present.

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Dr. E. Lee Dorsett, St. Louis, was a guest of the Maternal Welfare Committee of the Illinois State Medical Society at a public meeting at Alton, Illinois, June 23, sponsored by the Madison County Medical Society. Dr. Dorsett spoke on "Maternal Welfare."

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The Southwest Missouri Medical Society met in Springfield on May 31, the first meeting since 1931. Dr. A. C. Ames, Mountain Grove, presided. Appearing on the scientific program were Drs. Palmer Findley, Omaha, Nebraska; William J. Shaw, Fayette; E. Lee Dorsett, St. Louis; T. R. Meyer, Clayton, and Paul F. Cole, Springfield.

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Dr. Henry S. Millett, Kansas City, has recently become associated with the Major Clinic for Nervous and Mental Diseases, Kansas City. Dr. Millett is a graduate of the University of Kansas School of Medicine and has practiced in the Mercywood Sanitarium and St. Joseph Hospital, Ann Arbor, Michigan; the Neurological Institute, Bellevue Hospital and the Brooklyn State Hospital, New York, and has taught neuropathology at Columbia University, New York University and the Long Island College Medical School, New York.

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The \$150,000 reproduction of the Sir Luke Fildes' masterpiece, "The Doctor," first shown by the Petrolagar Laboratories at the Century of Prog-

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2. Bergman, A. J., and Turner, C. W.: The Biological Assay of the Carbohydrate Metabolism Hormone of the Anterior Pituitary, *J. Biol. Chem.* 123:471, 1938.

ress Exposition, Chicago, in 1933, was recently presented by its owners to the new Rosenwald Museum of Science and Industry, Chicago. Following the showing at the Exposition "The Doctor" exhibit went on a tour of 50,000 miles and was viewed by over five million people in eighteen principal cities throughout the country. Designed to remind the public of the importance of the family physician, it required the full time of the late Chicago sculptor, John Paulding, and the noted artist, Rudolph Ingerle, and a large corps of assistants nearly a year to complete it. In its new location in the Rosenwald Museum it will be seen by millions of visitors annually.

The seventeenth annual scientific and clinical session of the American Congress of Physical Therapy will be held in conjunction with the twenty-second annual convention of the American Occupational Therapy Association, September 12 to 15, in Chicago. From September 7 to 10 the Congress will conduct an intensive instruction seminar in physical therapy for physicians and technicians. Every subject in the physical therapy field will be covered. Information concerning the convention and the instruction seminar may be obtained by addressing the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

Past Presidents of the Missouri State Medical Association were honored at a dinner given by the Council in Jefferson City, May 1, preceding the Annual Session. Members of the Council and the following Past Presidents attended: Drs. C. H. Wallace, St. Joseph; Herman E. Pearse, Tonganoxie, Kansas; Robert E. Schlueter, St. Louis; A. R. McComas, Sturgeon; G. Wilse Robinson, Kansas City; William H. Breuer, St. James; Frank G. Nifong, Columbia; Frank I. Ridge, Kansas City; J. F. Harrison, Mexico; Joseph W. Love, Springfield; C. T. Ryland, Lexington; E. Lee Miller, Kansas City; Dudley S. Conley, Columbia, President, and B. W. Hays, Jackson, President-Elect. Unable to attend were Drs. A. H. Hamel, St. Louis; Ross A. Woolsey, St. Louis; W. L. Allee, Eldon, and T. W. Cotton, Van Buren. Dr. M. Pinson Neal, Columbia, Chairman of the Council, presided and short addresses were given by Drs. Conley, Wallace, Schlueter, Breuer, Pearse and McComas.

## MISCELLANY

### STATE BOARD OF HEALTH

#### Lay Lectures on Obstetrics and Pediatrics

The declining birth rate in Missouri has turned the efforts of three state agencies to better care of mothers and infants. Beginning July 5 a state-wide program in maternal and infant hygiene will be launched by the

State Health Department, the Missouri State Medical Association and the Extension Bureau of the University of Missouri.

The program is educational and will consist of lectures to lay people. The primary object is to show Missouri women the importance of seeking medical advice early in pregnancy and continuing regular visits to the physician after the baby is born.

The general public will be invited to attend all meetings. Through cooperation of the University Extension Bureau, these lectures will be made available to the 35,000 members of the 1700 Home Makers clubs throughout the state. Arrangements will be made by county medical societies assisted by county extension and home demonstration agents.

The lecturers will be Dr. Paul F. Fletcher, obstetrician, and Dr. O. F. Bradford, pediatrician. The state has been divided into forty-one units, each comprising from one to four counties. The two lecturers will start at opposite corners of the state and within a year the entire state will have been covered by both specialists. The lecturer will remain for a week in each unit, appearing on four days before lay groups and on the fifth day before physicians in the area for a postgraduate clinical conference. Throughout the week he will be available to physicians for consultations and clinics.

During the last two years these two physicians have been devoting full time to postgraduate conferences for physicians. This program for lay groups will urge expectant mothers to seek medical care early in pregnancy and to place the baby under the physician's care so that many of the illnesses that are so costly in infant lives may be avoided.

The lecture schedule for July follows:

#### Pediatrics, O. F. Bradford, M.D.

Date	County
July 5, 6.....	Atchison
July 7 .....	Holt
July 8 .....	Physicians' Conference
July 11, 12.....	Nodaway
July 13, 14.....	Andrew
July 15 .....	Physicians' Conference
July 18 .....	Harrison
July 19 .....	Worth
July 20, 21.....	Gentry
July 22 .....	Physicians' Conference
July 25 .....	Mercer
July 26 .....	Sullivan
July 27, 28.....	Grundy
July 29 .....	Physicians' Conference

#### Obstetrics, Paul F. Fletcher, M.D.

July 5 .....	Dunklin
July 6 .....	New Madrid
July 7 .....	Pemiscot
July 8 .....	Physicians' Conference
July 11 .....	Mississippi
July 12 .....	Scott
July 13, 14.....	Cape Girardeau
July 15 .....	Physicians' Conference
July 18 .....	Wayne
July 19, 20.....	Butler and Stoddard
July 21 .....	Bollinger
July 22 .....	Physicians' Conference
July 25 .....	Ripley
July 26 .....	Carter
July 27 .....	Shannon
July 28 .....	Oregon
July 29 .....	Physicians' Conference

Beginning with this issue, the State Board of Health each month will report news of its activities. Attention of the medical profession is invited to this column.



### District Health Units

During the last eighteen months a reorganization of public health activity has been effected by the State Health Department. Missouri has followed the example of several other states in setting up district health units designed to serve as a skeleton organization for all public health work. The state is divided into eleven such districts.

The districts began as an aftermath of the flood in 1937. Four district health units were set up to serve ten flood stricken counties. When the emergency in that area had subsided a plan was devised to establish health districts all over the state, each one to comprise a variable number of counties according to public health needs and economic status. Each district is provided with a trained health officer, two or more nurses and a public health engineer. Headquarters are established in centralized locations. This work is financed by state appropriations and Social Security funds.

The program is educational and aims to provide some public health service for all rural Missouri. While providing only limited service, the plan offers each county and community the opportunity of establishing its own program. The ultimate goal is development of whole time county health units and nursing services.

The aims, therefore, are of the broadest nature and it is anticipated that actual public health service in all phases will create a desire for health protection and will lead to the establishment of adequate health organizations in all rural areas.

The district program is one of prevention, not treatment. A few treatment centers for syphilis have been established with the cooperation of the medical profession. Only indigent cases are treated and all are referred by practicing physicians. They are required to bring with them from their doctor a signed statement referring them to the district health office for treatment.

Antisyphilitic drugs are furnished free by the State Health Department for indigent cases. At first it will be necessary to limit free drugs to those persons having had the disease less than two years. With more funds this work may be extended to all indigents.

Below is a list of district health offices together with personnel. Any changes in personnel will be published in *THE JOURNAL* from time to time.

All practicing physicians are urged to familiarize themselves with the program. The success of the program depends upon the cooperation of both the medical profession and lay groups. Each district has a health officer, an engineer and from one to three nurses. The districts follow:

#### Health Districts

*District Number 2:* Headquarters, Dexter (Stoddard County). Health Officer, Dr. T. L. Waddle.

*District Number 3:* Headquarters, Kennett (Dunklin County). Health Officer, Dr. W. H. Aufranc.

*District Number 4:* Headquarters, Fredericktown (Madison County). Health Officer, Dr. E. M. Bryan.

*District Number 5:* Headquarters, Salem (Dent County). Health Officer, Dr. C. W. Meinershagen.

*District Number 6:* Headquarters, Ozark (Christian County). Health Officer, Dr. H. H. Asher.

*District Number 7:* Headquarters, Osceola (St. Clair County). Health Officer, Dr. Merrett L. Gentry.

*District Number 8:* Headquarters, Higginsville (Lafayette County). Health Officer, Dr. Asa Barnes.

*District Number 9:* Headquarters, Owensville (Gasconade County). Health Officer, Dr. Seth Barnes.

*District Number 10:* Headquarters, Kirksville (Adair County). Health Officer, Dr. Wm. J. Sullivan.

*District Number 11:* Headquarters, Cameron (Clinton County). Health Officer, Dr. Leon F. Weyerlich.

### WORK OF THE INTERDEPARTMENTAL COMMITTEE TO COORDINATE HEALTH AND WELFARE ACTIVITIES OF THE FEDERAL GOVERNMENT

JOSEPHINE ROCHE, Chairman

Interdepartmental Committee to Coordinate Health and Welfare Activities of the Federal Government

WASHINGTON, D. C.

The Interdepartmental Committee was created in August, 1935, following the passage of the Social Security Act, in order that the full benefits of the varied Federal program under the Act's provisions might reach with minimum delay and maximum effectiveness the individual men, women and children for whose aid and service the program was brought into existence. Obviously, duplication of work and effort, conflict in policy or procedure among Federal agencies had to be prevented and common understanding and action developed if the values of the program were to be translated quickly into realities.

As members of this Committee the President designated four assistant secretaries of government departments, the Treasury, Interior, Agriculture and Labor, and the chairman of the Social Security Board.

The committee's first task was the setting up of technical committees to work out immediately cooperative agreements between Federal agencies functioning together in the states. Two may be used as illustrations: the agreement between the United States Public Health Service and the Children's Bureau on public health nursing, and the agreement between the United States Public Health Service and the Division of Labor Standards, on industrial hygiene.

The technical committee of the Children's Bureau and the United States Public Health Service representatives worked out an agreement defining the objectives, setting standards of service and committing both the Children's Bureau and the Public Health Service to a joint approach to the various state health departments so that efforts of the two agencies should not be retarded by any duplication of effort or multiplicity of supervising units, with the inevitable misunderstandings and confusion in the field which would result.

The industrial hygiene agreement was the result of a desire on the part of the Department of Labor and the Public Health Service to promote in the states the establishment of industrial hygiene units in the state health departments which would cooperate with the state labor agencies in the pursuance of the common objective, protection of the working population from industrial health hazards.

Other technical committees working out similar interdepartmental agreements for administrative coordination are those on crippled children and the needy blind.

While there has not been, of course, 100 per cent success in eliminating duplication of effort and competition between interested agencies in the states, we are convinced that the three years' experience has evolved a useful and unique mechanism for coordinated procedure. It is useful in that technical groups may meet together and, through conference and interchange of experience, approach mutual understanding and agreement based upon a solid foundation of fact. It is unique in its simple combination of facilities to provide direct administrative action when technical groups have determined the procedures through which harmony of action may be achieved.

Working under the instruction of the President's

Presented by Dr. Warren F. Draper, Assistant Surgeon General and Delegate from the United States Public Health Service, Washington, D. C., in the absence of Josephine Roche, in Executive Session of the House of Delegates of the American Medical Association, San Francisco, June 14, 1938.

order "to study and make recommendations concerning specific aspects of the health and welfare activities of the government" are the technical committees on recreation, nutrition, crime prevention and parole, and medical care.

In the work of the last named committee you have, of course, a special interest, and our Interdepartmental Committee is deeply grateful and encouraged to know that a number of you, including some of the officers of the American Medical Association, are to be with us at our National Health Conference July 18, 19 and 20 when the full report of this technical committee will be submitted and discussed.

At the time the technical committee on medical care was formed the national health survey of the Public Health Service was nearing completion. You are familiar with the results of that survey covering as it did some 800,000 families including 2,800,000 persons and supplemented by reports from physicians, health officers and institutions providing medical services. This survey made it possible to measure health needs quantitatively and to determine the degree of correlation among all the factors involved. It provided an index not only to the prevalence of disabling illness for the population as a whole but according to age, sex, occupation, family income, living standard and size of community. It made it possible to weigh these factors in relation to mortality figures as well as to medical and nursing care received and to the availability of hospital facilities.

The overwhelming central fact established by the national health survey is this: That with poverty goes not only a higher rate of sickness but a deficiency of medical care. These correlations were proven not only for the relief group but for struggling families above the level of relief. Many may have considered these facts too obvious to require proof and certainly they had been supported by innumerable smaller studies. But never before had such a mountain of evidence been assembled to sustain the conclusion that among the poor there is an excess of sickness and death which requires preventive services and medical care proportionately greater than are required in the higher income groups. And never before had it been so convincingly shown that in many areas and localities those economic groups which are most in need of preventive services and medical care are receiving far less of both than are families with larger individual financial resources.

The national health survey irresistibly drew the attention of the Interdepartmental Committee to the national problems of health and medical care. The technical committee on medical care was directed to study the results of the national health survey and to correlate with them all other available data on the subject. After more than a year of work, the technical committee produced a report on "The Need for a National Health Program" which was transmitted to the President last February. Already a part of this report, in which the health needs of the country are stated comprehensively yet concisely, has been made public; with facts and conditions such as it sets forth you have long been familiar through the years of generously contributing your skill and services to the destitute and broken men, women and children who have turned to you for aid in illness and suffering. It is to be hoped we may have graphically given to us by your own survey the full extent of the free services of the medical profession. It would be a good thing for every citizen to realize more clearly the immensity of the philanthropic burden which the members of the medical profession voluntarily assume.

We have the information as to health and medical needs in broad national terms. Your survey should be of great value in amplifying existing data regarding many specific localities and in presenting needs as they

are seen in the field by practicing physicians. In this, as in all other fields, it is necessary always to keep in mind the difference between active demand and actual need. Our present picture of the total need may be amplified or modified in detail as further special studies are made. But the report of the technical committee on medical care, based upon all available data, including direct contacts with large numbers of individual citizens as well as with professional groups and agencies, establishes conclusively the existence of grave and far reaching needs.

Together with you, those of us who have been battling on the economic front against unemployment, starvation wages, indecent housing and utterly inadequate food, find nothing new but only shocking confirmation of the extent to which human and economic waste has been permitted to go on, when we read from the technical committee's report on "The Need for a National Health Program" such facts as the following: On an average day of the year there are four million or more persons disabled by illness. Every year seventy million sick persons lose over one billion days from work on customary activities. In 1936, nearly a quarter of a million women did not have the advantage of a physician's care at delivery; 15,000 of these were delivered by neighbors or relatives; 223,000 were delivered by midwives, most of whom are untrained and ignorant.

In 1937, of forty-nine state health officers responding to a questionnaire only two reported the facilities for maternal care in their states as adequate. In large areas and groups of the population the death rates between the second and twelfth month of infancy are as high as they were for the whole country twenty years ago. Community measures for the control of communicable disease, so necessary in checking the acute infectious diseases of childhood, are inadequate in the greater proportion of rural counties throughout the country.

Each year, 40,000 young adults between the ages of 15 and 45 die from the ravages of tuberculosis. The deaths among these young adults represent about three-fifths of all deaths from this cause.

Preliminary results from the national health survey indicate that in that portion of the population who are receiving relief disabling illness occurred in 1935 at an annual rate 47 per cent higher for acute illness and 87 per cent higher for chronic illness than the corresponding rates for families with incomes of \$3000 and over. The annual days of disability per capita in the group on relief were found to be three times as great as among families in the upper income group; the population not receiving relief with an income under \$1000 showed a rate of disability over twice that of the highest income group. One in every twenty heads of families in the population on relief was unable to work because of chronic disability as contrasted with only one in 250 heads of families with incomes of \$3000 and over. Children of families on relief experienced 30 per cent greater loss of time from school and usual activities because of illness than did children in families in moderate and comfortable circumstances. Only 70 per cent of the cases of disabling illness among persons on relief received medical attendance exclusive of hospital care compared with a figure of 83 per cent for those with a family income of \$3000 and over. The average medical services per case of disabling illness were about 50 per cent higher in the highest income group than among persons on relief. Bedside nursing care in the home was given to less than 1 per cent in the disabling illnesses among persons on relief; the proportion so attended in the group with family income of \$3000 and over was 10 per cent.

These are only a few examples plucked more or less at random from the data which we have about the low income groups of our people. We must keep constantly in mind the fact that approximately fifty million of our



population are in families with an annual income of less than \$1000 a year.

When facts of denial and destruction of human values, such as these I have mentioned, are discussed in terms of the size of the population involved, the tens of millions of men, women and children who are their victims, the problem of providing adequate health and medical services obviously demands concerted public action for its satisfactory solution.

In calling the National Health Conference the Interdepartmental Committee is carrying out the suggestion of the President that it invite representatives of the interested public and of the medical and other professions to examine the health problems in all their major aspects and to discuss ways and means of dealing with these problems.

The National Health Conference is planned as a working conference. To provide the best opportunity for frank discussion it is necessary to limit the number of participants, but the Interdepartmental Committee hopes that they will be truly representative of both the professional groups who have the technical knowledge, and of the general public which is vitally interested in the distribution and application of this knowledge.

It is hoped that the conference will contribute to two ends: first, a better understanding of national needs in the field of health and medical care; second, the formulation of policies which will enable the medical and other professions, private organizations, Federal, state and local agencies and individual citizens to cooperate in efforts to meet these needs.

The technical committee on medical care will submit to this conference not only its analysis of needs but certain tentative recommendations as to means of meeting them. These recommendations have been submitted to the President and it is at his suggestion that they will be submitted to the consideration of the National Health Conference. The report deals with several broad problems: First is the need for more comprehensive public health services to combat specific diseases or groups of diseases such as tuberculosis, the venereal diseases, pneumonia, malaria, cancer and other chronic diseases of middle and old age, mental disease and deficiency, and industrial hazards.

Second is the need for expansion of maternal and child health services. The technical committee estimates that half the infant deaths and half the maternal deaths could be prevented by the application of the knowledge and skill which your profession now has.

Third is the shortage or unequal geographical distribution of hospitals, clinics, doctors, dentists, nurses and other agencies and trained experts in the field of health and medical care.

Fourth is the means of providing more adequate medical care for recipients of public assistance and other persons of very low income.

The final problem is methods of financing the sickness costs of self-supporting persons of limited means.

We do not intend to ask the National Health Conference to take formal action on any part of this report. We hope that none of the groups or individuals participating in the conference will attempt to make premature judgments or urge others to do so. Our purpose is to obtain the frankest discussion of ways and means of dealing with these immense and complex problems. We hope that the participants in the conference and, subsequently, other groups and individuals throughout the country will give us the full benefit of their knowledge, experiences and ideas.

No one formula or program can possibly be found adequate to meet the varied needs, but a composite of many efforts and plans, some already tested, some in experimental stages, some not yet under way, can and must be found. We believe that by providing an oppor-

tunity for an interchange of views between representatives of the medical and other professions, of various agencies and of the general public, the National Health Conference will dissipate misunderstandings and work toward a meeting of minds on the beginning of a coordinated national health program.

That there will be concerted public action eventually for such a program no one measuring the human needs and denials can doubt. In this great democracy with its unsurpassed resources and potentialities for human progress, one third of our people are not going to remain indefinitely ill fed, ill housed and ill cared for in sickness. Already they are on the march, and the only question which remains is whether highly specialized groups, experienced and trained in ways and means of meeting human needs, are going courageously and quickly to offer all they can give in constructive and progressive leadership and help in the meeting of the vast human problems of today.

You have your instruments of precision for diagnosis and treatment; your technics for prevention and cure are among the wonders of the modern world. How can we help to bring them to all our people who need them? That is the question which we submit to you today, the question we shall ask at our conference, must go on asking until we find the answer.

## TEN STEPS OF THE CANCER EXAMINATION

Prepared by the American Society for the  
Control of Cancer

The educational campaign for the prevention and control of cancer has as one of its major points of emphasis the periodic examination of the apparently well individual. Believing that the medical profession to whom the public must go for these examinations will welcome suggestions on points that should be stressed, the following outline of ten steps is offered. This outline should be supplemented by more intensive examinations whenever indicated. Tissue for microscopic examination should be secured whenever possible from suspected tissue.

1. Examine the lips, tongue, cheek, tonsils and pharynx for persistent ulcerations; the larynx for hoarseness and the lungs for persistent cough. Whenever possible obtain roentgenograms of suspected lung conditions.

2. Examine the skin of the face, body and extremities for scaly bleeding warts, black moles and unhealed scars.

3. Examine every woman's breasts for lumps and bleeding nipples. Use transillumination technic whenever possible.

4. Examine subcutaneous tissues for lumps of the arms, legs and body.

5. Examine the lymph node system for enlargement of nodes of the neck, groin or arm pit.

6. Investigate any symptoms of persistent indigestion or difficulty in swallowing. Palpate the abdomen. Whenever possible obtain roentgenographic examination of digestive tract in cases with suspicious history or findings.

7. Examine uterus for enlargement, lacerations, bleeding or new growths. Examine ovaries bimanually. Use the Schiller test (Lugol's solution) whenever possible.

8. Examine rectum and determine cause of any bleeding or pain.

9. Examine urine microscopically for blood.

10. Examine bones, taking radiograph of any bone which is the seat of boring pain, worse at night, or any swelling.

## OBITUARY

ELLIS FISCHEL, M.D.

Ellis Fischel, St. Louis, a product of Harvard College, Washington University Medical School, had interned at the City Hospital and pursued postgraduate studies in Berlin, Vienna, Munich, Berne; was 29, highly trained, rugged, tireless, ambitious when he and I entered upon a rather lengthy professional association in the course of which his ability and devotion to duty made a lasting impression upon me; our friendship continued to grow firmer through the subsequent years, ever a source of inspiration for which I am profoundly thankful.

He served at some time on the staffs of the City, St. Anthony's, Mullanphy, DePaul, Barnard Free Skin and Cancer, Jewish, St. Mary's, St. Luke's, Firmin Desloge and Barnes hospitals. He taught surgery at different periods in both of our universities and became a member of almost every one of our local and national societies to which a surgeon is eligible.

There seem to have been three distinct and separate currents discernible in his life's work, a forthright appraisal of which is, I am sure, all that he would willingly hear if present tonight. He was, first of all, a sound surgeon with a large experience; I never considered him a technical wizard but marvelled rather at the apparent ease with which he carried out procedures of almost unbelievable magnitude planned to cope with the regional spread of cancer. Certainly no work could be more exacting but with him it was a matter of almost daily successful routine. The second phase of his career which seems to deserve special attention is that concerned with the founding and growth of the St. Louis Clinics. He was secretary or president of this organization during its first six years, then continued as the mainspring of its existence for all the subsequent years of his life. He thereby did more, it has been said, than anyone else in contributing to coordinated and publicized *postgraduate medical teaching* in St. Louis hospitals. The third and most notable consideration which engaged most of his professional life was connected in one way or another with the study and treatment of cancer; he became successively a member of the board of directors of the American Society for the Control of Cancer, Chairman of its St. Louis Committee, Chairman of its Missouri State Committee. He had been since 1919 a member or secretary of the Barnard Free Skin and Cancer Hospital medical staff when in 1933 he became a member of that institution's board of directors as well. He was Chairman of the Committee on Cancer of the Missouri State Medical Association for the last seven years of his life, and was honored by being appointed to the chairmanship of the State Cancer Commission in which capacity he headed the group selected by the Governor to locate, plan and construct the State Cancer Hospital which has, since his passing, deservedly been named in his honor. How like Ellis Fischel to have chosen for his own that single problem in medicine which of them all gives least hope for ultimate solution! As Farnol wrote, "He ever chose the harder way."

As the pattern of a unique and exceptionally productive life unfolds itself one seeks, if at all a character student, to decipher the elements underlying that unusual combination before him; what then were Ellis Fischel's inborn traits?—what personality expressions did he acquire during his years of development?—what were the keys to his success?—and finally, what did he have in mind as the objectives worthy of his choice?

Those of us who knew him early were surprised I am sure at the spirit of independence in thought and action which impelled him to cut loose from a distinguished family tradition in internal medicine and then plan his own career apart. His accomplishments prove that he possessed a type of imagination which enabled

him to glimpse what lay beyond our common horizon. His work with the St. Louis Clinics and on the cancer problem show him to have been an exceptionally gifted executive. He impressed his coworkers as being devoted to an ideal and true to every trust. He made no false moves; he wasted no time and being possessed of an unusual physique was at all times an indefatigable worker.

He was particularly adapted to the stress and strain incidental to a career like his own because, as most men would say, he was unhampered by any soft side to his nature, at least the public saw none but we, here, cannot conceive of a man with his record lacking any measure of the tender regard which we ourselves hold for some few who are near and dear. It is true his emotions were never near the surface; he possessed them in plenty but was always self-controlled and when in the company of his colleagues inclined to be reticent, maintaining a reserve that discouraged undue familiarity on the part of all but those closest to him. Never in all the years I knew him so well, not even in his lightest moments did he ever seem lacking in dignity. In many instances he displayed a type of courage which goes far toward making a man seem indomitable, as when, a Harvard senior, he won the golden bat conferred each year for highest batting average on that rare type of player who instinctively steps forward to meet the pitch rather than draw back from the plate as do so many others; just as on the campus, so later too life's major issues were always met by him without flinching. He may be said truly to have been a stoic because no one ever heard him complain of blows which would have prostrated a less well poised man.

Results of the kind which he made possible for himself demanded sterling character in a man who took life seriously and never indulged any fantasy at all; I do not believe Ellis could have deceived himself if he had tried. He was inclined to forceful open argument when he differed radically with a colleague; in fact, I have heard him called almost brutally frank but this surely was because he was so wholly honest; while always outspoken he never lacked the expected consideration for others. He was never guilty of unfair personal criticism; he told a man the truth to his face but the argument ended as far as he was concerned when the two parted. It would be wholly unfair if I did not add at this point that he was possessed of rare social charm which at all times delighted those who knew him best.

A summary of all his endeavors point unerringly toward a life of service to mankind. His efforts in behalf of the St. Louis Clinics and of the cancer cause certainly were never directed toward his own personal advancement although material reward was, of course, inescapable for a man whose attainments were far in excess of the measure to which we are accustomed.

This cultured man, finished surgeon and surpassing organizer was only 54 when devotion to his chosen field of professional endeavor led directorly to his untimely end; he was hastening to Governor Stark's office for a conference regarding final details of the State Cancer Hospital design when there was a highway crash; ruthless fate had decreed that the dream of his mature years should not become a reality for himself.

The true record of a man's career is, in a way, a mirror for it gives back only that which he himself has put into it; by this same token existence here should for all of us be measured by the sum of our accomplishments rather than by the calendar. If this be true, then Ellis Fischel's life though all too short in years was wonderfully full even to the bitter end and this character sketch reveals, as seems to me at least, a man who in that last split second, if he realized what impended, surely died as he had lived—unafraid.—W. B. in the Weekly *Bulletin* of the St. Louis Medical Society.



## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.

Perry County Medical Society, December 4, 1937.

Ste. Genevieve County Medical Society, December 14, 1937.

Camden County Medical Society, January 7, 1938.

Webster County Medical Society, January 7, 1938.

Montgomery County Medical Society, January 14, 1938.

Dent County Medical Society, January 21, 1938.

Miller County Medical Society, February 8, 1938.

Moniteau County Medical Society, March 11, 1938.

ASSOCIATE EDITORS: COUNCILORS OF THE  
TEN COUNCILOR DISTRICTS

### MISSOURI STATE MEDICAL ASSOCIATION

Eighty-First Annual Session

Jefferson City

May 2, 3, 4, 1938

### MINUTES OF THE HOUSE OF DELEGATES

House Chamber, State Capitol Building

Monday, May 2, 1938

#### Morning Session

The first meeting of the House of Delegates of the Eighty-First Annual Session of the Missouri State Medical Association, held in the House Chamber of the State Capitol, Jefferson City, was called to order at 10:00 a. m., Monday, May 2, 1938, by the President, Dr. Dudley S. Conley, Columbia.

The Committee on Credentials reported ninety-six officers and delegates present.

Officers, Councilors and Delegates present during the Session follow:

#### Officers

President.....Dudley S. Conley, Columbia

President-Elect...B. W. Hays, Jackson

Vice Presidents... { William A. Bloom, Fayette  
E. L. Johnston, Concordia  
S. E. Mitchell, Malden

Secretary.....E. J. Goodwin, St. Louis

Assistant

Secretary.....E. H. Bartelsmeyer, St. Louis

Assistant

Treasurer.....Ralph L. Thompson, St. Louis

#### Councilors

1st District.....A. S. Bristow, Princeton  
2nd District.....H. B. Goodrich, Hannibal  
3rd District.....Curtis H. Lohr, St. Louis  
4th District.....R. B. Denny, Creve Coeur  
5th District.....M. Pinson Neal, Columbia  
6th District.....A. J. Campbell, Sedalia  
7th District.....E. P. Heller, Kansas City  
8th District.....H. L. Kerr, Crane  
9th District.....W. H. Breuer, St. James  
10th District.....A. H. Marshall, Charleston  
(Delegate)

#### Delegates

##### COUNTY

##### DELEGATE

Adair-Schuyler-

Knox-Sullivan..J. S. Gashwiler, Novinger

Adair-Schuyler-

Knox-Sullivan..F. E. Luman, Edina

Audrain.....J. F. Harrison, Mexico

Barry.....F. T. Kerr, Monett

Barton.....J. A. Atkins, Lamar

Bates.....T. J. Halsey, Butler

Boone.....A. R. McComas, Sturgeon

Buchanan.....L. P. Forgrave, St. Joseph

Buchanan.....W. T. Elam, St. Joseph

Callaway.....Ralf Hanks, Fulton

Carter-Shannon..T. W. Cotton, Van Buren

Chariton.....J. W. Hardy, Sumner

Christian.....R. R. Farthing, Ozark

Clay.....N. R. Schuhmacher, Kearney

Cole.....J. A. Ossman, Jefferson City

Cooper.....Morris S. McGuire, Boonville

Dallas-Hickory-

Polk.....V. H. Greenwood, Buffalo

Dallas-Hickory-

Polk.....A. J. Stufflebam, Humansville

Dent.....F. E. Butler, Salem

Dunklin.....E. L. Spence, Kennett

Franklin.....Frank G. Mays, Washington

Gasconade

Maries-Osage...O. H. Jones, Vienna

Gentry.....J. N. Barger, Albany

Greene.....Paul F. Cole, Springfield

Greene.....H. A. Lowe, Springfield

Harrison.....W. A. Broyles, Bethany

Howard.....J. W. Gardner, Glasgow

Jackson.....B. Landis Elliott, Kansas City

Jackson.....John R. Green, Independence

Jackson.....E. Lee Miller, Kansas City

Jackson.....R. R. Coffey, Kansas City

Jackson.....Herbert L. Mantz, Kansas City

Jackson.....E. Kip Robinson, Kansas City

Jackson.....John E. Castles, Kansas City

Jackson.....Ralph R. Wilson, Kansas City

Jackson.....John McLeod, Kansas City

Jackson.....Morris B. Simpson, Kansas City

Jackson.....Ira H. Lockwood, Kansas City

Jackson.....George H. Thiele, Kansas City

Jasper.....R. M. James, Joplin

Jasper.....E. D. James, Joplin

Johnson.....W. R. Patterson, Warrensburg

Laclede.....J. A. McComb, Lebanon

Lafayette.....C. T. Ryland, Lexington

Lawrence-Stone..L. M. Lyons, Pierce City

Lawrence-Stone..H. L. Kerr, Crane

Lewis.....P. W. Jennings, Canton

Lincoln.....J. C. Creech, Troy

Linn.....E. F. Weir, Meadville

Marion-Ralls....J. E. Brown, Perry

Marion-Ralls....W. F. Francka, Hannibal

Mercer.....J. M. Perry, Princeton

Miller.....G. D. Walker, Eldon

Mississippi.....A. H. Marshall, Charleston

Moniteau.....J. P. Burke, Jr., California

Montgomery.....B. Menefee, Montgomery City  
Morgan.....J. L. Washburn, Versailles  
Newton.....R. F. Cheatham, Diamond  
Nodaway.....B. F. Byland, Burlington Junction  
Perry.....B. T. Koon, Perryville  
Pettis.....W. A. Beckemeyer, Sedalia  
Phelps-Crawford..R. E. Breuer, Newburg  
Phelps-Crawford..A. H. Horne, Steelville  
Pulaski.....C. Mallette, Crocker  
Putnam.....P. V. Hart, Coatesville  
Randolph-Monroe.F. L. McCormick, Moberly  
Randolph-Monroe.M. C. McMurry, Paris  
Ray.....L. D. Greene, Richmond  
St. Francois-Iron-  
Madison-  
Washington-  
Reynolds.....R. Appleberry, Farmington  
St. Francois-Iron-  
Madison-  
Washington-  
Reynolds.....W. H. Barron, Fredericktown  
St. Francois-Iron-  
Madison-  
Washington-  
Reynolds.....J. L. Thurman, Potosi  
Ste. Genevieve....R. C. Lanning, Ste. Genevieve  
St. Louis.....E. R. Brown, University City  
St. Louis.....O. W. Koch, St. Louis  
St. Louis.....C. P. Dyer, St. Louis  
St. Louis.....John O'Connell, Overland  
St. Louis City....Robert E. Schlueter, St. Louis  
St. Louis City....Neil S. Moore, St. Louis  
St. Louis City....Daniel L. Sexton, St. Louis  
St. Louis City....Alphonse McMahon, St. Louis  
St. Louis City....Cyrus E. Burford, St. Louis  
St. Louis City....Clinton W. Lane, St. Louis  
St. Louis City....Victor E. Sherman, St. Louis  
St. Louis City....Herbert S. Langsdorf, St. Louis  
St. Louis City....Anthony B. Day, St. Louis  
St. Louis City....Theodore H. Hanser, St. Louis  
St. Louis City....Lee D. Cady, St. Louis  
St. Louis City....Carl F. Vohs, St. Louis  
St. Louis City....Philip S. Luedde, St. Louis  
St. Louis City....Paul Nemours, St. Louis  
St. Louis City....M. J. Pulliam, St. Louis  
St. Louis City....Jerome I. Simon, St. Louis  
St. Louis City....William G. Becke, St. Louis  
St. Louis City....Joseph L. Hutton, St. Louis  
St. Louis City....V. Visscher Wood, St. Louis  
St. Louis City....C. H. Neilson, St. Louis  
St. Louis City....Percy H. Swahlen, St. Louis  
Saline.....L. S. James, Blackburn  
Scott.....E. J. Nienstedt, Sikeston  
Shelby.....D. L. Harlan, Clarence  
South-Central—  
Howell.....A. H. Thornburgh, West Plains  
Wright.....R. A. Ryan, Mountain Grove  
Stoddard.....T. L. Waddle, Dexter  
Vernon-Cedar....J. W. Dawson, Eldorado Springs  
Vernon-Cedar....C. B. Davis, Walker  
Webster.....C. R. Macdonnell, Marshfield

On motion of Dr. W. H. Breuer, St. James, the reading of the minutes of the previous meeting was dispensed with and adopted as printed in *THE JOURNAL*.

The President, Dr. Dudley S. Conley, Columbia, read his message and recommendations as follow:

#### PRESIDENT'S MESSAGE AND RECOMMENDATIONS

You have been selected from your counties and communities to represent them in this body, to reflect their views and to learn the viewpoints of other delegates similarly selected. I hope each of you will let this body have your and your community's feeling on the ques-

tions that come up for solution and also keep in mind that the welfare of your Association as a whole is more important than is the welfare of any particular community.

*National Affairs.*—With opinions so rapidly changing in regard to governmental and social conditions, it is well for us to stop, look and listen before we rush blindly into trouble. We should and must realize that we are fighting a joint battle with our comrades, the members of organized medicine, in America. Our parent organization, the America Medical Association, is fighting with us and for us. They have a right to ask for and to expect our support. They have asked certain information from each county society in the United States in the form of a survey made by those most qualified to make it, the physicians of such communities.

I wish to urge each Delegate to see that his Society cooperates thoroughly, completely and promptly with the American Medical Association when these questionnaires reach your Society.

The purpose of this survey is, as you well know, an effort to secure authentic information as to medical care everywhere in the United States in order to combat the many false and misleading statements which have reached government authorities and lay people through other surveys which have been widely publicized by the press with the result that our profession is being misjudged and, in some instances, maliciously slandered. If we do our job well as county societies and turn in accurate information on the real medical needs in our respective communities, we need have little fear for the outcome as regards the future security and individualism of our profession.

*Local Affairs.*—It is becoming increasingly evident that we are doing much good through postgraduate meetings in the county societies and councilor districts. Also, we have expanded greatly our efforts in educating lay groups. We have many committees now carrying on these functions. I suggest that you accept the recommendation of the Postgraduate Committee that the activities of all these different committees be correlated through a special committee composed of the chairmen of various committees concerned with health education.

The Council, at its meeting on April 15, approved a Committee for the Conservation of Eyesight. I recommend that such a committee be appointed to consist of five members, two to be named for three years, two for two years and one for one year. The chairman of this committee also should be a member of the correlating committee just mentioned.

Dr. Olin West of the American Medical Association has suggested that a Committee on Automobile Accidents be appointed by the various state associations to devise some plan of cooperation with other agencies which might be helpful in the problems of automobile accidents. A special committee of three might make a study of this subject and work in cooperation with a similar committee which at present is functioning in the American Medical Association.

I wish to call your attention to the report of the Committee on Constitution and By-Laws which makes no recommendations on the amendments to the Constitution proposed at our meeting a year ago. I am well aware that there is some difference of opinion throughout the state as to changes. I am also aware that there are some faults and defects in both our Constitution and in these suggested amendments. It seems to me that a thorough study should be made of our Constitution and of constitutions of other state associations and an attempt made to obtain the opinion of all Missouri physicians. This could well be done by instructing our Council to conduct such a study, make it a special order of business at its July meeting and report its findings and recommendations at our next Annual Meeting for



final adoption in 1940. By this procedure I believe we might secure a constitution which will be satisfactory to the entire membership and will safeguard the best interests of the Association as a whole.

You have had copies of the reports of the various committees. All of them are splendid examples of much thought and hard work. They will not be read from the floor but each Chairman will be asked to enlarge upon or explain any points if he so desires. After presentation of these reports, all, except those which you approve here, will be sent to the proper reference committees. I shall ask the chairman of each reference committee to notify the Secretary the time and place of the meeting of his committee and I urge any of you who are interested in a particular report to appear before the committee and give them your opinion on how the reports should be handled.

Finally, may I take this occasion to express to every physician in Missouri my appreciation for the kindly manner in which I have been treated this year, which to me will always be memorable.

I have had the finest sort of cooperation from the county societies, from the Council, from the entire secretarial staff and headquarters office.

I would indeed be guilty of gross negligence should I fail to pay tribute to our efficient State Board of Health. Many times they have consulted with your officers and have been guided as far as in their power by our opinions for the best interests of our profession and for the welfare of the people of Missouri.

All have contributed to make my term of office a happy and never to be forgotten experience.

On motion of Dr. E. J. Goodwin, St. Louis, duly seconded, the message was referred to the Council excepting that portion concerning the Constitution and By-Laws which was referred to the Reference Committee on Constitution and By-Laws.

The President appointed the following reference committees:

#### Reference Committee on Amendments to Constitution and By-Laws

M. Pinson Neal, Columbia, Chairman.  
J. P. Burke, California.  
Neil S. Moore, St. Louis.

#### Reference Committee on Resolutions

Ira H. Lockwood, Kansas City, Chairman.  
C. T. Ryland, Lexington.  
R. B. Denny, Creve Coeur.

#### Reference Committee on Miscellaneous Affairs

R. M. James, Joplin, Chairman.  
Paul F. Cole, Springfield.  
W. T. Elam, St. Joseph.

#### Reference Committee on Medical Education and Public Welfare

Percy H. Swahlen, St. Louis, Chairman.  
A. J. Campbell, Sedalia.  
A. H. Thornburgh, West Plains.

Dr. W. H. Breuer, St. James, Chairman of the General Committee on Arrangements, reported as follows:

#### REPORT OF THE GENERAL COMMITTEE ON ARRANGEMENTS

The General Committee on Arrangements has arranged the program and the exhibits and the matter of entertainment has been left to the local committee of which Dr. Irl B. Krause, Jefferson City, is chairman. He will report later.

On motion, duly seconded, this report was adopted.

The report of the Secretary, Dr. E. J. Goodwin, St. Louis, follows:

#### REPORT OF THE SECRETARY

The Association office has cooperated with all committees in their functioning and much of the work of the Association office is reflected in their activities. The committees have been energetic during the year and have accomplished much progress of which they can be justly proud, as is the entire membership of the Association.

Work in cooperation with the State Board of Health in the Refresher Courses in Obstetrics and Pediatrics has continued through the year, the Committee on Maternal Welfare maintaining its close cooperation with the Board. The Association's Committee on the Control of Syphilis has also worked in close cooperation with the State Board of Health and is indebted to the State Board of Health for much valuable assistance.

The Association has cooperated with the Missouri State Committee of the American Society for the Control of Cancer in gaining cooperation of county medical societies for lay meetings on "Cancer."

Lay education has increased greatly this year. The Committee on Health and Public Instruction, the committees on Postgraduate Work, Cancer, Mental Health, Maternal Welfare and Control of Syphilis have all furnished speakers for lay groups. The McAlester Foundation sponsored a series of radio broadcasts during this spring and several other health talks have been broadcast.

The Association has attempted recently to assist the young physician or the physician wishing a new location to find a community where a physician is needed and which will be suitable to the physician. A surprising number of interns have taken advantage of this service and have made arrangements for their locations when they have completed their internships early this summer. Several older physicians who wish to retire gradually from their practices have asked for younger men to be directed to them and this arrangement has been made in several cases.

Our President was called upon to appoint chairmen of the Public Policy Committee and the Committee on Medical-Legal Affairs to fill the unexpired term of Dr. W. L. Allee, Eldon, who resigned because of illness. Dr. Conley appointed Dr. J. F. Harrison, Mexico, chairman of the Committee on Public Policy and Dr. James W. Allee, Eldon, as the third member of the Committee. Dr. Conley appointed Dr. James R. McVay, Kansas City, chairman of the Committee on Medical-Legal Affairs and Dr. C. T. Ryland, Lexington, the third member on the Committee. Dr. D. A. Robnett and A. J. Durant, V. M. D., were appointed associate members of the Committee on Health and Public Instruction.

The Nominating Committee must submit nominations for the following offices:

Three vice presidents to fill the vacancies created by the expiration of the terms of Drs. W. A. Bloom, Fayette; E. L. Johnston, Concordia, and Samuel E. Mitchell, Malden.

The terms of the Councilors of the odd numbered districts expire this year and the Committee must nominate members to fill the vacancies in these districts.

The terms of three Delegates to the American Medical Association expire this year, Dr. A. R. McComas, Sturgeon; Dr. W. H. Breuer, St. James, and Dr. W. M. West, Monett. However, since we lost one delegate from our quota in the reapportionment at the Atlantic City Session only two Delegates to the American Medical Association Session may be elected this year.

The Cole County Medical Society has worked industriously in making the necessary arrangements for our Session and has also provided a number of tournaments such as golf, skeet shooting and bowling. In addition

the members of Cole County have planned a stag party for Monday night following the Maternal Welfare dinner and a dance and entertainment for all members and their wives and friends to follow the Woman's Auxiliary Bring-Your-Husband Dinner on Tuesday night.

Many of the component societies have lost their original charters and duplicate charters have been issued to them when they have notified us of the loss. The charter is an important document for the society to preserve. It should be framed and hung in the office of the secretary and handed with other records of the society to a new secretary when one is elected.

In 1937 there was a gain of thirty-eight members. In 1936 there was a gain of sixty-two and in 1935 a gain of twenty-nine members.

#### Status of Membership

Number of members, January 1, 1937 .....	3217
New members .....	190
Reinstated .....	20
	210
Total .....	3427
Dropped .....	55
Deceased .....	87
Transferred .....	30
	172
Total, January 1, 1938 .....	3255
Of this total 213 are Honor Members.	

E. J. GOODWIN, Secretary.

On motion of Dr. W. T. Elam, St. Joseph, duly seconded, this report was referred to the Council.

The report of the Treasurer was read by Dr. Ralph L. Thompson, St. Louis, as follows:

#### REPORT OF THE TREASURER

Since the financial status of the Association was published in detail in THE JOURNAL, I will give a summary of the various funds.

General Fund .....	\$ 6,915.81
Legislative Fund .....	5,449.63
Defense Fund .....	1,420.76
Sinking Fund .....	4,269.09
Total .....	\$18,055.20

The report of the Treasurer was referred to the Council.

The report of the Committee on Scientific Work, Dr. E. J. Goodwin, St. Louis, Chairman, follows:

#### REPORT OF THE COMMITTEE ON SCIENTIFIC WORK

The report of the Committee on Scientific Work is represented in the program. We are glad to observe that quite a few members in the younger group of physicians are represented for the first time. We are also pleased to note that the largest number of papers ever presented by members outside of the populous centers appears on this program.

Three guest speakers have accepted invitations to address us. They are Dr. J. H. J. Upham, Columbus, Ohio, President, American Medical Association, and Dean, Ohio State University College of Medicine; Dr. George M. Curtis, Columbus, Ohio, Research Professor in Surgery, Ohio State University College of Medicine; and Dr. Palmer Findley, Omaha, Nebraska, former President and charter member of the Central Association of Obstetrics and Gynecology. Governor Lloyd C. Stark will deliver the address of welcome.

E. J. GOODWIN, Chairman,  
W. T. COUGHLIN,  
JAMES E. STOWERS.

On motion, duly seconded, the report was adopted.

The report of the Committee on Postgraduate Course, Dr. C. H. Neilson, St. Louis, follows:

#### REPORT OF THE COMMITTEE ON POSTGRADUATE COURSE

From April 1, 1937, to April 1, 1938, the Postgraduate Committee sent one hundred thirteen speakers to eighty meetings of twenty-six component societies. During the previous year ninety speakers were sent to eighty-five meetings of twenty-six component societies.

The function of the Committee on Postgraduate Course is to provide speakers on request to county medical societies. It has become a part of the function of many of our committees to furnish speakers, either on request or as a part of a state wide program, to appear before county medical societies and sponsored lay audiences. While some of this educational work has been in cooperation with the Postgraduate Committee, yet we feel the activities of all the Association's committees in such work should in fact be correlated. In our opinion this can best be accomplished through the establishment of a special committee composed of the chairmen of the following committees: Postgraduate Course, Health and Public Instruction (McAlester Foundation), Cancer, Mental Health, Maternal Welfare, Fractures, Physical Therapy, Control of Syphilis and Medical Economics.

Through such a correlation of committee activities a plan could be outlined to emphasize a selected subject each month and offer it as a topic for discussion at one meeting of each county medical society during the month. The same topic could be discussed in THE JOURNAL of that month by the publication of one or two articles on the topic selected. In this manner the objective of certain committees to encourage discussion of topics in their respective fields of medicine would be accomplished more easily. For example, during one month all county medical societies could discuss at one meeting the topic of syphilis, thereby enabling our membership to have a thorough understanding of the program of the Board of Health for the control and treatment of syphilis. Other monthly topics for discussion might be suggested as follow: Cancer, maternal and child welfare, mental health, medical economics, physical therapy, fractures, crippled children, pneumonia, diphtheria, annual physical examinations with particular attention to heart diseases and tuberculosis, conservation of eyesight. And there are numerous other topics in the field of preventive medicine.

Recently a representative of the Council on Medical Education and Hospitals of the American Medical Association conducted a survey of our postgraduate educational activities. It was pointed out that by correlation of committee activity in this field the records of this activity could be more easily kept so that our Association would receive a proper credit for its work.

The State Board of Health through its president, Dr. M. B. Clopton, and Commissioner of Health, Dr. Harry A. Parker, has extended an invitation to our Association to join with the Board in a more comprehensive plan of cooperation in the presentation of scientific and preventive health educational programs to physicians and lay audiences in the state. The plan includes an expansion of the "Refresher Courses" so well conducted during the last year as well as other fields of preventive medicine. It should result in great good to the individual physician and to his community. Through such a coordination of the activities of our Association with those of the Board of Health the individual physician will have every advantage of postgraduate education and the public the benefit of health education from a reliable source.

We believe that through such correlated activity we can successfully demonstrate to the public that individual practitioners of medicine are being thoroughly



instructed and informed on the latest methods of medical progress and that there is no need for a change from individualistic enterprise to socialistic enterprise.

We therefore recommend for your approval the appointment of a special committee to be known as the Postgraduate Correlating Committee to be composed ex officio of the chairmen of the committees named above.

C. H. NEILSON, Chairman,  
M. PINSON NEAL,  
REXFORD L. DIVELEY.

Dr. Neilson, Chairman, reporting further, said: I wish this morning to compliment the state as a whole on its activity; I wish to compliment the Councilors and some of the county societies as well.

Postgraduate instruction today is assuming importance. As you all know, there are now ten or more specialty boards organized under the control of the American Medical Association and these specialty boards are planning the certification of such specialists. That means about five years of guided work for the young man who wants to become a surgeon, an internist or an oculist. Many young graduates are staying in the hospital three, four and five years, and it is a necessity almost in order to become certified as a specialist.

Also professional postgraduate work is assuming large proportions. Recently I was at a meeting of the Council on Medical Education of the American Medical Association in Chicago and one of the events of the day was the time set apart for the teaching of doctors. A man from Michigan gave a report of the plan that is carried out in Michigan, an elaborate plan under the guidance of the University of Michigan. They have full time men in the University of Michigan and the programs and plans for the instruction of doctors in the local areas are most excellent and most complete. That is important because some of these young men in the outlying districts will want to be certified as specialists and this postgraduate work, if on the proper basis, serves as a part of the five year preliminary instruction that certification demands.

Missouri took up the question of postgraduate instruction early but we have not accomplished as much as we should. I feel with the appointment of this correlating committee we can make better plans for the coming year. For instance, we might in November or December, in the councilor districts and county societies all over the state, take up the question of pneumonia. We could have articles prepared by competent men published in THE JOURNAL and during those months the question of pneumonia could be studied, all the new things that are coming in to use. Another month we might take up the question of syphilis and in other months, maternal welfare and mental health, making this a program which affects all parts of the state at the same time, not necessarily during the same week but the same month.

I therefore recommend, Mr. President, and you have referred to this in your message, that the House of Delegates give some thought to this special committee and see if we cannot get credit for the work we are doing and also do better work.

The Council of the American Medical Association has a full time man under the direction of Dr. Cutter. This man is going into all the states of the Union and finding out how much postgraduate work is being done. Our report has been given to this special commissioner and while it is rather complete it is also rather fragmentary and shows that our work has not been coordinated. I am glad to make this report this morning and I think such a plan would be of great advantage to the State of Missouri.

This report was referred to the Reference Committee on Medical Education and Public Welfare.

The report of the Committee on Publication, Dr. Walter Baumgarten, St. Louis, Chairman, follows:

## REPORT OF THE COMMITTEE ON PUBLICATION

January 1, 1937, to January 1, 1938

The 34th volume of THE JOURNAL was completed with the December issue. During 1937 there have been published in THE JOURNAL seventy-five original articles, two special articles, sixty-nine editorials, one hundred and seventy-two news items, fifty-four obituaries, one hundred society proceedings and ten Councilor's reports, ten Woman's Auxiliary reports, twenty-two miscellaneous articles, six correspondence, one hundred eighteen book reviews and fifteen commercial announcements. There were 478 pages of reading material and 410 advertising pages. There were 130 books received during the year for review in THE JOURNAL and were distributed to medical libraries in the state.

Advertising in THE JOURNAL from January 1, 1937, to January 1, 1938, earned \$8,855.64, with \$946.78 to be collected, totalling \$9,802.42. Subscriptions of nonmembers amounted to \$86.75, making \$9,889.17 actually earned by THE JOURNAL. The cost of production of THE JOURNAL (printing and illustrations) was \$6,311.83.

WALTER BAUMGARTEN, Chairman,  
BUFORD G. HAMILTON,  
WILLIAM A. BLOOM.

The report was referred to the Council.

The report of the Committee on Public Policy, Dr. J. F. Harrison, Mexico, Chairman, follows:

## REPORT OF THE COMMITTEE ON PUBLIC POLICY

The Committee on Public Policy has had only a few matters brought to their attention since the last Annual Session at Cape Girardeau.

Any legislative matter must, of course, be deferred until the regular biannual session of the State Legislature which convenes in January, 1939.

The matter of submitting a Basic Science Law has been discussed but will not be covered in this report since a special Committee formed to study the Medical Practice Act was authorized to include in their consideration the feasibility of proposing a Basic Science Law in the 1939 legislative program.

At its annual meeting November 23, 1937, the Council approved a recommendation made by the Committee on Maternal Welfare and Committee on Study of the Control of Syphilis as follows: "That a bill similar to the Illinois Marriage Certificate Law be enacted in Missouri." Following the adoption of the resolution the Council directed this Committee to have prepared a bill similar to the Illinois State Law for presentation to the House of Delegates at the Annual Meeting at Jefferson City, May 2, 1938.

It has come to the knowledge of this Committee that a lay organization (The Missouri Women's Chamber of Commerce) has had prepared a bill patterned after the Illinois Law for which they desire the approval of the medical profession.

We have read the bills that have been prepared by the Missouri Women's Chamber of Commerce and it is our opinion that nothing would be gained by having different bills prepared.

Therefore, this Committee submits, with this report, copies of the two bills which the above mentioned organization proposes to urge the Missouri State Legislature to adopt.

The proposed bills are designated 2977A and 2977B. The Committee is taking this method of presenting

the question for discussion by the House of Delegates and will be directed by their action in the matter.

J. F. HARRISON, Chairman,  
W. H. BREUER,  
J. W. ALLEE.

Dr. Harrison, Chairman, reporting further, said: The report of the Committee on Public Policy might be outstanding if we promoted anything. It is not because we are unmindful of the many things that might be introduced by the State Medical Association in the session of the Missouri Legislature in 1939, but we feel it is much better if this program could be selected and approved by the House of Delegates rather than that our Committee outline a complete program. We are mindful of the several subjects that have been discussed, for instance, the basic science law. You will hear of that from the Committee on Study of the Medical Practice Act. The Committee on Maternal Welfare at the Columbia meeting of the Council requested that the Committee on Public Policy have prepared a hygienic marriage law, i. e., medical examination prior to the issuance of a marriage certificate along the line of the Illinois law, for presentation at this meeting. We found that the Women's Chamber of Commerce in Missouri had devoted a great deal of time to such a bill and were anxious to promulgate the idea and desired the cooperation of the Missouri State Medical Association. Without in any way endorsing what this organization has prepared or committing the State Association to any program in regard to this, it seems inadvisable, rather than have any duplication whatever, to employ an attorney to draft a bill which is practically a copy of the Illinois law. As to whether the Missouri State Medical Association wants a law in regard to that matter is for this House of Delegates to determine. My personal impression is that there are a good many flaws in the Illinois law which I will not attempt to discuss at this time.

I mentioned the basic science law. As I understand it, this probably would be a great help to us if we could get such a law enacted. But, speaking frankly, unless it was endorsed by the osteopaths it would probably cause a stormy session in the Legislature; but that need not deter the members of the House of Delegates from thinking about it.

The question of habit forming drugs has also been discussed, drugs not covered by the narcotic law. It seems to me from the experience I have had that such a law would be a rational thing.

There is also the matter of amendments to the Workmen's Compensation Act. What are your recommendations?

I have been a member of this Committee for a long time and I think it would not be inappropriate to make a few remarks in regard to some of the methods of procedure in the Legislature. It is difficult to introduce a bill in the House and get it passed and signed by the Governor. We may get one bill through, an outstanding one, but if you have had any experience along that line you feel if you can do that you have accomplished a great deal.

In regard to the medical lien law against insurance that individuals may have on their automobiles or persons, in 1934 we introduced a bill of that kind which was passed by the House and got to the Senate but for some reason it was not approved by the insurance companies and was killed in committee in the Senate. If you want to bring that matter up again it is all right.

Since the report was made we have received a communication from the secretary of the Jasper County Medical Society. Someone there has suggested that service furnished organized agencies should be deducted from your income tax. In other words, if you want to keep a record of the material furnished, it

might be deducted from your income tax. I doubt if it would be constitutional and I think it would have to be taken up with the Federal government.

A great deal of the time of this Committee is taken up by opposing bills that are introduced at each session of the Legislature. I should say that 50 per cent of the time of the Committee is consumed in opposing the enactment of laws that originate entirely outside of the medical profession, bills that would be detrimental to the public and to our profession if passed.

In conclusion I want again to urge the members of this House of Delegates and every member of the Association to cultivate the acquaintance of their legislators and prospective legislators, the men who are now announcing their candidacy in the different counties. They are more approachable before the primaries than they will be in November after the election. It is hard to make contact with these men when the Legislature is in session unless there has been some groundwork done and if they have not been informed of the altruistic purpose of our medical legislation. The Committee seeks the cooperation of every member of the State Association. As to the best program to be outlined, we do not know and we would much prefer that a committee be created to report back to the Council and cooperate with us in regard to this legislative program. There are a number of things that might be put on such a program, but if it is too broad we cannot get far. I personally feel that the Missouri State Board of Health at the present time is admirably constituted and cooperates with the State Association; I also feel the same way about the Governor.

This report was referred to the Council.

The report of the Committee on Defense, Dr. C. E. Hyndman, St. Louis, follows:

## REPORT OF THE COMMITTEE ON DEFENSE

April 15, 1937, to April 15, 1938

### Status of Cases

Cases pending April 15, 1937 .....	9
Threats pending April 15, 1937 .....	4
New cases (April 15, 1937, to April 15, 1938) .....	6
New threats (April 15, 1937, to April 15, 1938) .....	0
Cases settled (April 15, 1937, to April 15, 1938) .....	5
Threats which have been dropped .....	3
Cases pending April 15, 1938 .....	10
Threats pending April 15, 1938 .....	1
Financial assistance rendered .....	\$150

Of the five cases settled during the year one was a verdict for the defendant, two cases were settled out of court and two were dismissed.

C. E. HYNDMAN, Chairman,  
O. B. ZEINERT,  
M. L. KLINEFELTER.

This report was referred to the Council.

The report of the Committee on Medical Economics, Dr. Carl F. Vohs, St. Louis, follows:

## REPORT OF THE COMMITTEE ON MEDICAL ECONOMICS

The program presented by this Committee to the House of Delegates at the Columbia Session in 1936 and augmented at the Cape Girardeau Session is progressing favorably.

Many county medical societies have held conferences with Farm Security Administration workers and are doing fine work in getting the program under way. Applications have been completed and all details of procedure worked out for medical health services in four counties, Camden, Miller, Mercer and Cass. It is



the desire of the Committee to have four or five other counties develop the program along similar lines for test purposes. After this test period it should be possible to recommend to all the county medical societies a definite and uniform plan. It is therefore necessary for counties making these tests to keep accurate records and make reports to the State Committee on Medical Economics.

Two years have elapsed since the inauguration of the first unit of the Medical Economic Security Administration in St. Louis. Group Hospital Service, the second unit, has been in operation approximately eighteen months, and many meetings have been held looking to the formation of a Central Registration Bureau which will complete the Administration.

The Committee is pleased to report that we have not deviated in a single instance from our original plan and objective. From the beginning we have found it exceptionally easy to secure the cooperation of the patient in the low income bracket. Of 1642 patients whose health needs were budgeted either on a prepayment or postpayment basis through the Bureau, we know of no instance where the patient was displeased with the services of the Bureau or was not grateful to the dentist or physician who referred him to our office. All these patients came voluntarily to the Bureau. Hospitals are now referring as many patients to the Bureau as are the professions.

The amount of health bills budgeted through the Medical-Dental Service Bureau was approximately \$150,000, representing medical, dental and hospitalization costs. During the two year period we collected from patients and collected for the professions \$80,000. The average bill amounted to \$87.31.

Far greater benefits have been obtained from the inauguration of the Medical Economic Security program, and particularly through the services of the Medical-Dental Service Bureau and Group Hospital Service, than can be measured by statistics. All these benefits are not apparent as yet and only time will prove the results. We are referring to the educational activities of the two units which are now in operation. The executive director has appeared before and spoken to approximately 100,000 individuals comprising civic organizations, church groups and employees in industry. Four other members of the staff have spoken under the most favorable conditions before approximately 100,000 more—all employees in offices and industry in St. Louis and vicinity. In addition to this direct contact we have caused to be inserted in the payroll envelopes of 175,000 more employees a small leaflet urging the individual to see his family dentist or physician and ask for the privilege of budgeting their health needs through the Medical-Dental Service Bureau and not delay further. Unquestionably, one of the most beneficial accomplishments the Bureau has been able to achieve has been the amount of good will engendered between the employer, the employee and the professions. We have received the greatest cooperation from practically every employer with whom we have come in contact. To our knowledge, this is the first time that the people of Missouri have had interpreted for them properly the need and desirability of securing the services of their family dentist or physician, and at the same time providing a means whereby these services can be obtained in accordance with their ability to pay for them.

By these methods we have been able to successfully combat a number of health service plans of an unethical nature which several industries were prepared to inaugurate. While we have not engaged in acrimonious debate with the representatives of certain foundations who have been engaged in counseling groups of employees and employers in setting up prepayment health plans that did not provide for free choice of

physician, dentist or hospital, we have assiduously followed up their work in an attempt to interpret the American principle of securing not only adequate health protection but good care and in a manner which does not deprive the employee of free choice of doctor nor interfere in any way whatsoever with the personal relationship between doctor and patient.

With the inauguration of the Central Registration Bureau for Hospitals and Clinics, we are convinced that a greater number of indigent and part indigent can be served and at the same time cause the referring of more patients to the offices of the family dentist and physician with resultant savings to the taxpayers and contributing public. With the completion of this coordination of health resources of both voluntary and tax supported institutions and agencies we feel sure that Missouri will be in a particularly advantageous position. There are many indications which point to further activity in the field of social economics by the present administration such as a proposed health insurance program of some degree or another.

Missouri has the distinct honor of having the first group hospitalization plan in the country established by the professional men themselves. Starting in St. Louis the plan has rapidly spread to the entire metropolitan area including St. Charles County and the East St. Louis district. Cape Girardeau has adopted the plan and it is hoped soon to have the eastern part of the state well enrolled. Kansas City will soon begin operating under a similar plan. It may soon be possible to enroll 35,000 farmers and their families through the resettlement program. Starting without funds in April, 1936, it now has enrolled 30,000 wages earners and their families in the static income class. Its cost of \$1.50 per family per month, regardless of the number of the family, compares more than favorably with the lowest cost plans in the United States.

We are exceptionally well pleased with the anticipated morbidity incidence as approximately 72 per cent of income is paid for hospitalization of the members; 13.5 per cent for administrative expenses and 14.5 per cent allocated to surplus and reserves. The Missouri Plan meets most rigidly the tenets of the American Medical Association; and we have recently been informed by the American Hospital Association that the Plan will receive the award of merit as an ethical community program.

At the present time our assets approximate \$74,000 of which more than \$45,000 is in free cash surplus. The ratio of our current assets to our current liabilities is 7 to 1.

The Committee has been much concerned with the placing of young medical men in our rural districts. We earnestly solicit the aid of the older men in the various communities in this work.

The Committee, with the aid of the special committee appointed last year, will augment the survey we are now making of the medical needs of the state to meet the program outlined by the American Medical Association. This will be an important piece of work and organized medicine must do a better job than has been done by any foundation.

The Committee again endorses the program introduced at previous Annual Sessions; and may we summarize by giving you the program for 1938 as follows:

1. Develop the Resettlement Administration Program.
2. Develop fundamental principles to govern existing employees' benefit association prepayment plans.
3. Develop the Missouri State economics program.
4. Introduce into the State Legislature the following laws: (a) Revised Workmen's Compensation Act; (b) Medical Lien Law; (c) Basic Science Law, and (d) a law to inaugurate the integration of the profession.
5. Make a complete survey of the medical needs of

the state and develop economic units to meet these needs.

CARL F. VOHS, Chairman,  
E. L. JOHNSTON,  
MORRIS B. SIMPSON.

Dr. Vohs, Chairman, reporting further, said: The Committee on Medical Economics, as you know, has been in existence for about five years and a tremendous amount of time has been spent by the Committee members and a good deal of work has been done. The fruits of our labor probably will be more apparent within the next few years. I wish at this time to thank the members of the Committee and the Council for the splendid cooperation they have given in every respect to the work of the Committee and for the results that have developed. I think Missouri has made a record in the history of the medical profession in that our plans are being studied by many other state organizations and we are meeting all the requirements of the board of the American Hospital Association. We are constantly receiving requests from state organizations and we are sending them our setup and our statistics. I think they are more or less being accepted universally. Just recently the State Association of Pennsylvania has been having a controversy with the hospital association on this subject and we had a letter from the chairman of the committee of the state society in which he said they would stand or fall by the by-laws and constitution we had adopted in regard to group hospitalization in Missouri.

Missouri has been given the honor of the chairmanship of the Northwest Regional Conference. This is a conference consisting of sixteen states in the central northern portion of this country. We think a tremendous amount of valuable information on medical economics comes out of these conferences and we think definite plans for the future are being formed. The American Medical Association is paying more attention to this conference. At the last meeting a tremendous amount of statistics was presented. Men who have been studying medical economics for the last ten years are coming to definite conclusions and formulating plans and policies.

There is to be a survey made by the American Medical Association. Reference was made to this by President Conley in his address. You remember at Cape Girardeau a committee was appointed to study health conditions in this state and now that the American Medical Association has taken this up it will be on a broader basis. This committee will be of great help and each Councilor will be responsible for his district. The Committee on Medical Economics and other committees will have the duty of making a definite investigation and seeing that a report is made by every physician. That will be handled by Councilor Districts and referred to the state committee. I want to impress upon you the importance of this survey. The foundation has been laid in the past. Committees, including the Committee on the Costs of Medical Care, have made reports to the government; the government has made a survey using WPA workers, and now organized medicine is attempting to make a survey of medical conditions. If we do not make a report that will substantiate the statements we have made in the past, that the people of America are getting the best type of medical care in the world, then we shall not have done our duty as members of the medical profession. I do not mean that this report should be whitewashed but it should state facts clearly and show to the people the conditions that should be corrected. It is our duty to make that survey complete and then follow it up.

This report was referred to the Reference Committee on Miscellaneous Affairs.

The report of the Committee on Cancer, Dr. Ellis Fischel, St. Louis, Chairman, follows:

## REPORT OF THE COMMITTEE ON CANCER

The fifth year of the five year plan of the Committee on Cancer was devoted to the subject "Cancer of the Stomach and Esophagus." A letter was sent to all county medical society secretaries requesting that one program of the society be devoted to this subject. Eleven scientific programs were arranged by county medical societies and forty-seven talks to lay groups were given. Approximately three thousand physicians and lay persons attended these meetings. Forty physicians, members of the speakers' bureau, participated in these programs. A number of radio talks were broadcast during 1937. During February, 1938, on invitation of the McAlester Memorial Foundation, Dr. Dudley A. Robnett, Columbia, gave a talk on "Cancer" in a series of broadcasts sponsored by the Foundation. On February 21 Drs. Charles F. Sherwin and A. N. Arneson, St. Louis, broadcast at Jefferson City under the auspices of the Cole County Medical Society on the subject "What the Layman Should Know About Cancer." The Committee on Cancer wishes to thank the members of the speakers' bureau for giving their time to this work.

The Advisory Committee to the Committee on Cancer held its first meeting on May 11, 1937, during the Cape Girardeau Session. Ways and means for increasing interest in the cancer problem in the districts of the state were discussed. No action was taken.

An impromptu meeting of the Committee was held July 1 at Columbia with Drs. Ralf Hanks and T. S. Lapp, Fulton, of the State Hospital, at which many phases of the operation of the tumor clinic at Fulton were discussed.

A meeting of the Committee on Cancer and Mr. W. Ed. Jameson of the Eleemosynary Board, Dr. Hanks, Dr. Lapp and Dr. M. Pinson Neal, Columbia, was held October 4 for the purpose of inspecting the new hospital building and provisions for cancer patients at the Fulton State Hospital. The question of the location of the State Cancer Hospital was informally discussed. Drs. Earl C. Padgett, Kansas City, and Dudley A. Robnett, Columbia, felt it would be advisable to locate the hospital in Columbia. No action was taken.

The members of the Committee on Cancer and the Eleemosynary Board were invited to attend a meeting of the Cancer Commission of the State of Missouri in Fulton on February 23 for the purpose of discussing the future disposition of the Tumor Clinic at Fulton and the interrelationship of the Committee on Cancer and the Cancer Commission.

The Committee on Cancer then went into executive session. The Chairman reported that all recommendations made by the Committee on Cancer and approved by the House of Delegates at the last Annual Session were carried out with the exception of the establishment of the postgraduate course at Missouri University Medical School for the physicians of the state, to be offered by the Pathology Department. This omission was due to a misunderstanding as to the initiation of the mechanism for the establishment of this course. After motion duly made and seconded it was resolved that the Committee on Cancer request Dr. M. Pinson Neal to act upon this recommendation.

A monthly report by Dr. Lapp of the Tumor Clinic at Fulton has been submitted to THE STATE JOURNAL since October 1, 1937, and printed in THE JOURNAL.

The activities of the Tumor Clinic from March 1, 1937, to March 1, 1938, are as follows:

New patients .....	169
Visits to clinic .....	429
Radium treatments .....	161
Biopsies .....	44
Deep x-ray treatments .....	40
Minor operations .....	23
Major operations .....	24



Admissions to the Clinic by counties were:

Adair .....	1	Grundey .....	1	Newton .....	1
Audrain .....	9	Howard .....	11	Osage .....	1
Barton .....	3	Lawrence ..	7	Pettis .....	11
Bates .....	2	Lewis .....	1	Polk .....	1
Boone .....	10	Linn .....	5	Ralls .....	2
Callaway .....	20	Marion .....	2	Randolph .....	11
Chariton .....	5	McDonald ..	1	Saline .....	2
Clark .....	1	Miller .....	4	Shelby .....	2
Cooper .....	1	Moniteau ..	1	Schuyler .....	1
Douglas .....	1	Monroe .....	16	Stoddard .....	1
Gasconade .....	2	Morgan .....	2	Sullivan .....	1
Greene .....	11	Montgomery	3	Wright .....	1

From state institutions admissions were:

State Hospital No. 1 .....	9
State Hospital No. 3 .....	1
State Hospital No. 4 .....	1
State Penitentiary .....	1
State Tuberculosis Sanatorium .....	1

Again this year it is noticed that the admissions were more than double the admissions for the previous year. We have also had a marked increase in the amount of surgery and radium treatments. With the opening of the floor for cancer patients in the new hospital at Fulton which is now ready for occupancy, there will no doubt be a marked increase in the activities of the tumor clinic for the coming year.

Following the recommendation that the Committee on Cancer cooperate with all agencies concerned with the health of our citizens in furthering the general lay educational program of the Missouri State Committee of the American Society for the Control of Cancer, it is noted that the Women's Field Army of the Society in Missouri is rapidly organizing the counties of the state for the annual enlistment drive during April, 1938, for the purpose of financing the educational program which has been explained in several issues of *THE JOURNAL*. A letter was sent to all county medical society secretaries asking their cooperation and requesting that the county medical societies act as advisory committees to the local leaders of the Women's Field Army. Since this program is under the direct supervision of the medical profession, it is necessary that the doctors give the Women's Field Army officers all the assistance they can. Whenever possible, local physicians will be called upon to fill requests for talks on cancer by local groups. All expenses of the Women's Field Army activities naturally are borne, not by the Committee on Cancer, but by the Missouri State Committee of the American Society for the Control of Cancer.

The Committee on Cancer wishes to thank all the members of the Missouri State Medical Association who assisted the Committee in carrying out its recommendations approved by the House of Delegates in May, 1937.

ELLIS FISCHEL, Chairman,  
D. A. ROBNETT,  
EARL C. PADGETT.

Dr. Fischel, Chairman, reporting further said: The activities of the Committee on Cancer for the last year finish the five year program which we feel has been more or less successful, more successful than most five year programs. Now our job is to pause and receive comments, plenty of knocks, I suppose, and we hope a few encomiums for the work of the Cancer Committee.

One activity of the Committee was not mentioned in the report. The Committee on Cancer forms a part of the executive committee of the American Society for the Control of Cancer and as such we are more or less responsible for the educational program. This includes the enlistment drive by the Women's Field Army. This undoubtedly will be a national affair, but it cannot pos-

sibly take place in any state unless it has the full approval of the medical association of the individual state. Therefore, the Committee on Cancer will always be responsible if a campaign is carried on in an objectionable manner in any of the counties of the state. The county medical societies are asked to cooperate and participate in any lay educational program.

This report was referred to the Reference Committee on Medical Education and Public Welfare.

The report of the Committee on Mental Health, Dr. G. Wilse Robinson, Kansas City, Chairman, follows:

## REPORT OF THE COMMITTEE ON MENTAL HEALTH

A meeting of the Committee was held in Columbia, October 21, 1937. This meeting was attended by Drs. Ralf Hanks, Fulton; Orr Mullinax, St. Joseph; F. A. Carmichael, Fulton, and G. Wilse Robinson, Kansas City.

The new buildings at the state hospitals are not yet ready for occupancy and the institutions are greatly overcrowded. The last report available shows that in September, 1936, there were 7621 patients in our four state hospitals. These patients were occupying space designed to care for 4984 patients. Commitments to our state hospitals are increasing, as indicated by the report of the State Eleemosynary Board for the years 1933, 1934, 1935 and 1936. In 1933 admissions were 1596; 1934 admissions were 1634, and 1935 admissions were 2197; in 1936 admissions were 2419. During these four years a total of 7846 patients were admitted, and 519 patients discharged as cured.

We still insist that the medical staffs of our state hospitals are too small, and because of this situation and the overcrowded conditions the medical staffs are greatly handicapped in their work.

The doctors of the state are taking more interest in the subject of mental health. This is evident by the fact that the chairman of the Committee on Mental Health has spoken by invitation to the following medical societies since the first of September, 1937: In September, Ray, Cass and Lafayette counties; in October, Atchison, Platte and Callaway counties; in November, Johnson and Phelps-Crawford counties; in December, Nodaway, Laclede and the South Central group of counties at Mountain Grove; in January, Grundy, Moniteau and St. Charles counties.

Dr. E. F. Hootor, Farmington, spoke to ten groups of teachers in Southeast Missouri, at the annual meeting of the Southeast Missouri Medical Association at Fredericktown, at the annual meeting of the Missouri Probate Judges Association at Rolla, to the Women's Club of the Lead Belt at Flat River and to the Women's Club of St. Francois County at Farmington.

In connection with the talks on mental health at most of these meetings, motion pictures have been shown demonstrating the treatment of dementia praecox with insulin. The meeting at Fulton was a joint meeting of the Callaway County Medical Society and the consulting staff of the Fulton State Hospital. Drs. Hanks and Carmichael were at the meeting at Warrensburg. Dr. Carmichael gave a talk and Dr. Hanks gave a paper on "The Relationship of Psychiatry to General Practice of Medicine." Dr. Hanks presented a paper before the Southeast Missouri Medical Association at Fredericktown.

These meetings have been well attended and considerable interest was manifested by the doctors in attendance in the subject of prevention of mental ill health. We are expecting to meet with other county societies in the near future. We realize that much can be done by the general practitioner in the prevention of mental ill health.

The teaching of psychiatry in our medical schools

should be a major subject. On the contrary, it is made a very minor subject, and for this reason the average physician has taken little interest in the subject of psychiatry in the past. We are trying to correct this situation and believe that we are making substantial progress.

We believe the Postgraduate Committee should stress the importance of mental health talks, as the subject of psychiatry is a major problem in medicine, and touches the practice of every physician.

G. WILSE ROBINSON, Chairman,  
F. A. CARMICHAEL,  
RALF HANKS,  
E. F. HOCTOR,  
ORR MULLINAX.

Dr. Robinson, Chairman, reporting further, said: The Committee has made extensive contacts during the last year with physicians and some lay groups. We have found that the demand for education in mental health and mental hygiene is universal throughout the state. As the result of this demand certain lay groups and certain laymen are carrying out sporadic, individual, educational programs.

It is the consensus of opinion of your Committee that mental health and mental hygiene and everything that relates to mental illness is a medical problem and therefore the same attitude toward mental illness should be taken as is taken toward other types of sickness. Therefore we offer the following resolution:

*Resolved*, That the House of Delegates of the Missouri State Medical Association go on record that:

1. All matters pertaining to mental health, mental hygiene and mental illness in general should be under the jurisdiction of the Missouri State Medical Association and its Committee on Mental Health.

2. That all educative programs and clinic efforts in matters of mental health in the State of Missouri should be carried out under the supervision of the Committee on Mental Health of the State Association.

3. That the educative facilities of the Missouri State Medical Association, through its committees and foundations, shall be placed at the disposal of the Committee on Mental Health as they are placed at the disposal of any other committee of the State Association.

The report was referred to the Reference Committee on Resolutions.

The report of the Committee on Maternal Welfare, Dr. Ralph R. Wilson, Kansas City, Chairman, follows:

### REPORT OF THE COMMITTEE ON MATERNAL WELFARE

This being the Committee's third year of activity, many of the minor problems of pioneer organization have been passed. In its progress, however, it has encountered new and unexpected difficulties from time to time but through the assistance of the officers and councilors and various other committees of the Missouri State Medical Association, prospects of definite advancement are in evidence.

Referring to the report of 1937, it is recalled that the Committee had classified its activity into three main groups: (1) relationship to the medical profession itself; (2) relationship to the State Board of Health, and (3) relationship to the public at large.

#### A. Relationship to the Medical Profession Itself

Dr. O. F. Bradford and Dr. Paul F. Fletcher are now completing the state schedule with respect to the "refresher courses" in pediatrics and obstetrics. While this has been a pioneer enterprise fraught with unforeseen hazards and difficulties, praise is due to both of these field workers for their ingenuity and enthusiasm and interest which has established this feature of the Missouri Plan for Maternal Welfare and Child Care as one of great prominence. The results of these courses have been felt in many ways, none of which are unfavorable:

(1) There has been a perceptible tendency for closer cooperation between component county medical societies and the mother organization.

(2) Several counties have attributed an increased membership to this series of postgraduate lectures.

(3) Busy practitioners of medicine have been permitted to enjoy a course in these two subjects without being called away from their daily practice.

(4) Busy practitioners have come to realize that the medical profession is needed to guide the efforts of "lay organizations" in the studies and activities concerning maternal welfare and child care. In a few instances educational talks for laymen have been conducted under the auspices of the local medical societies, at which the speakers were either one of the two field workers or one selected from the auxiliary group according to availability and proximity.

Three specific recommendations have been made to the Council which have been acted upon favorably:

(1) The endorsement of the Women's Chamber of Commerce in their attempt to promote legislation requiring health certificates by those applying for marriage certificates.

(2) With relation to participation in Social Security funds it was recommended by the Committee for the action of the Council as follows: "It is our honest and firm opinion that the Maternal Welfare and Child Care program in the State of Missouri, which has been developed by the Missouri State Board of Health and the Missouri State Medical Association and approved by the Children's Bureau during its years of successful operation, will not be benefited by any attempt to incorporate the plan offered recently by the Missouri Association of Osteopathic Physicians and Surgeons. It is urgently recommended that the entire responsibility for this program be left completely in the hands of the original organizers and present administrators, whose efforts thus far have been approved by the Children's Bureau."

(3) The Committee is desirous of cooperating with the American Committee on Maternal Welfare, Incorporated, and to this end recommended that the film entitled, "The Birth of a baby" be presented under the given restrictions in this state at an agreeably appointed time.

Aside from the annual Maternal Welfare Dinner, your Committee has had two interim meetings for executive purposes, one at Cape Girardeau in May, 1937, the other in Columbia, November, 1937. In January, 1938, a long distance telephone conference was arranged because of the inclement weather.

The speaker for the annual dinner at 6:30 p. m. on Monday, May 2, 1938, at the Missouri Hotel in Jefferson City, will be Dr. Palmer Findley, Omaha, Nebraska, one of the outstanding teachers and organizers of the profession.

On the Tuesday morning following, Dr. Findley will speak on "Puerperal Sepsis" before the General Meeting.

At the Maternal Welfare Dinner, as has been the custom, cases will be presented from private practice which have teaching value. A critique of these presentations will be made by Dr. Findley. At this dinner, also, there will be awarded the Committee's prize for the best article appearing in *THE JOURNAL* on some phase of maternal welfare.

The Committee expects to present a scientific exhibit at the Annual Session in Jefferson City.

#### B. Relationship to the State Board of Health

The Committee is pleased to report its continued pleasant relationship with the State Board of Health and the Commissioner of Health. Activities in this respect have mainly been along the following lines:

(1) Satisfactory arrangements are being worked out for the future schedules operating under the Social



Security plan. Beginning July 1, 1938, "lay education" will be a more prominent feature than in the past.

(2) The Committee is attempting in its limited way to cooperate with (a) the State Board of Health in its present survey of the midwife problem in Missouri, (b) the State Board of Health in its survey of indigents with relation to the status of medical care and, (c) with the Committee for the Study of the Control of Syphilis.

The State Board of Health is sending out prenatal and postnatal letters to those who are recommended by recognized clinics, or physicians in good standing. This was endorsed by the House of Delegates at the Cape Girardeau Session.

### C. Relationship to the Public at Large

Since the main feature of the Social Security program has been educational, both for the profession and public at large, progress is gradually being made with plans toward including the laity to a greater degree. The state has now been covered by the field workers giving "refresher courses" to physicians in good standing in the Missouri State Medical Association.

Beginning July 1, 1938, a schedule for the state will go into operation that has been worked out with the State Board of Health, the Maternal Welfare Committee and the Home Economics Extension Division of the University of Missouri. The Extension Division operates through clubs of rural women which exist in one hundred and ten counties over the state. Of these one hundred and ten counties there are sixty-three which have county supervisors. A feature of their achievement program is maternal health and child care. By the cooperation of the above mentioned agencies, it is hoped that rural women will be reached in a manner entirely acceptable to the Missouri State Medical Association. No other agency offers equal opportunities for making contact with rural lay women as the Extension Division which has been operating since 1914.

The Committee wishes to express its appreciation for the specific service of the State Board of Health in submitting monthly the list of maternal deaths and the causes thereof. Likewise, it wishes to express appreciation specifically to Mr. Bartelsmeyer for the manner in which he has transacted the voluminous mass of work necessary in arranging for the state schedule.

### Recommendations

1. That each component county organization put on one program each year dealing with some phase of maternal welfare. Local talent is encouraged, but the two field workers and the accessory group of speakers are available for this purpose.

2. That continued cooperation be in evidence on the part of the profession in carrying out the plan whereby every expectant mother could have a Wassermann test.

3. That all officers of the Missouri State Medical Association cooperate to their fullest in giving attention to requests by various supervisors of the Home Economics Extension Service of the University of Missouri. The program is to be under the sponsorship of the local medical societies. The speakers shall be introduced by a representative of the local medical society who can explain to this type of audience the operation of the Missouri Plan.

4. That an acceptable way may be worked out to investigate maternal deaths by the questionnaire method.

In submitting this report, the Committee wishes to express its appreciation for the assistance at all times from the councilors and state officers of the Association around whom the entire program is built.

RALPH R. WILSON, Chairman,  
JOSEPH D. JAMES,  
BUFORD G. HAMILTON,  
W. T. STACY,  
E. LEE DORSETT.

Dr. Wilson, Chairman, reporting further, said: In addition to the report I would like to say that next year's program is progressing in good shape and will go into operation July 1. I also wish to reiterate our thanks to every member of the Association who has assisted the Committee in its work and to urge you to attend the Maternal Welfare Dinner this evening. Dr. Palmer Findley, Omaha, Nebraska, is the critique; he also will present a paper tomorrow morning as will Dr. William J. Shaw, Fayette, who has a report to make on 600 cases delivered in homes in rural districts.

I also wish to call your attention to the film "The Birth of a Baby" which will be shown at the Capitol Theater at 5 o'clock tomorrow afternoon. The Committee hopes to have state wide distribution of this film within a short time. That of course will be up to the county societies.

This report was referred to the Reference Committee on Medical Education and Public Welfare.

The report of the Committee on Health and Public Instruction (McAlester Foundation), Dr. A. R. McComas, Sturgeon, Chairman, follows:

### REPORT OF THE COMMITTEE ON HEALTH AND PUBLIC INSTRUCTION (McALESTER FOUNDATION)

In order to refresh our memories it might be well to restate the objects of the McAlester Foundation which was created in honor of Dr. A. W. McAlester, for many years connected with the State University as Dean of the Medical School. Its object is first to acquaint the laity, in an authoritative manner, with such information in regard to health as they may be able to use and, second, to promote scientific research. The trustees of the Foundation are made up of two members from the State Medical Association, one member elected from the Medical School of the University of Missouri, one elected from the Alumni of the Medical School of the University of Missouri and one from the School of Veterinary Science. The trustees elect a chairman and a secretary. The present trustees of the Foundation are Dr. A. R. McComas, Sturgeon; Dr. F. G. Nifong, Columbia; Dr. E. Lee Miller, Kansas City; Dr. D. A. Robnett and A. J. Durant, V.M.D., Columbia.

At the last meeting of the Council, the Committee proposed a series of radio broadcasts on lay education and also to contact through the cooperative extension workers in Agriculture and Home Economics of the University of Missouri the women throughout the state, enrolled in the courses offered by these departments. The Council endorsed these two requests. Arrangements were made to give thirteen fifteen minute broadcasts, written in the language of an eighth grade school student, over Station KFRU, Columbia. Each broadcast has been or will be submitted to the Committee before it is made. So far we have had six and the remainder of the topics have been assigned and scheduled. As far as we have been able to determine, these broadcasts have been well received. The first three broadcasts were published in the March issue of our State Association JOURNAL and the others will follow as they are submitted.

The Agricultural Extension Department was contacted and they signified their willingness to cooperate in our work. They submitted a number of bulletins on health matters which they have supplied to their students and we found upon reading them that they were satisfactory and none were objectionable. Their funds for printing and supplying these bulletins has been exhausted so that no money is available for printing additional bulletins now. We feel that it would be advisable to have bulletins of this nature for lay distribution.

The Committee trusts that there will be closer cooperation between this organization and other lay organizations of high caliber so as to prevent misunder-

standing which seriously handicaps the whole problem of lay education. On account of certain misunderstandings of the action of some of the Agricultural Extension workers, a part of the health program outlined by the Extension Department, which was to have been obligatory, was made optional instead. We believe that a better understanding and a closer cooperation with this group will result in ironing out all these difficulties.

A. R. McCOMAS, Chairman,  
E. LEE MILLER,  
FRANK G. NIFONG,  
D. A. ROBNETT,  
A. J. DURANT.

Dr. McComas, Chairman, reporting further, said: I suppose you have read the report of the McAlester Foundation as printed. In addition I wish to give you some facts and figures regarding the campaign of education carried on in the high schools and junior colleges in some portions of the state and the men who were active. In the Fifth Councilor District the total attendance at these meetings was 10,580; in the Ninth District the attendance was 4205, making a grand total of 14,785. The speakers were Drs. M. Pinson Neal and Dudley S. Conley, Columbia; E. Lee Miller and E. P. Hamilton, Kansas City; Irvin Abell, Louisville, Kentucky; F. G. Mays, Washington; R. A. Woolsey, St. Louis, and A. R. McComas, Sturgeon.

We found that in these high schools and junior colleges neither anatomy nor physiology is taught as such. They have in some instances a curriculum in which the subject of biology is taught. It is not a major subject and if they take physiology they get no credit for it. In this additional report we offer the following resolution:

WHEREAS, In view of the fact that investigation has unqualifiedly demonstrated that the basic subject of elementary anatomy and physiology has for some years been made an elective subject and is uncredited toward the attainment of a completed curriculum in the elementary and high schools of the State of Missouri; and

WHEREAS, In view of the fact that more than 95 per cent of all our high school graduates do not elect such uncredited courses and therefore have never received instruction in even the most elementary manner in subjects pertaining to structure and function of the human body; and

WHEREAS, In view of the fact that the state and nation are now attempting to educate the lay public in problems of health, maternal and child welfare and prevention of disease, and since educators in these fields are finding it almost impossible to impart this valuable information to basically uneducated laymen; therefore be it

Resolved, That the Missouri State Medical Association urgently request Lloyd W. King, the State Superintendent of Schools in the State of Missouri, to take some immediate action to rectify this offense to necessary public school instruction and re form our state wide curricula to again and always include an accredited course in elementary anatomy and physiology, to the end that satisfactory completion of such course shall be a requirement for certificate or diploma of graduation from public schools in the State of Missouri.

This report was referred to the Reference Committee on Resolutions.

A motion by Dr. W. T. Elam, St. Joseph, on the suggestion of the President, that the report of the Committee on Constitution and By-Laws be deferred until after other committee reports, was seconded and carried.

The report of the Committee on Fractures, Dr. M. L. Klinefelter, St. Louis, Chairman, follows:

## REPORT OF THE COMMITTEE ON FRACTURES

A meeting of the Committee on Fractures was called by the Chairman, Dr. M. L. Klinefelter, St. Louis, on November 23, 1937, at 10 a. m. in Columbia. Members present were Drs. M. L. Klinefelter, St. Louis; Frank D. Dickson, Kansas City; James D. Horton, Springfield, and William J. Stewart, Columbia.

A tentative program was outlined with regard to the management of the state meetings, and a policy was tentatively agreed upon to be offered to the Program

Committee of the Missouri State Medical Association, for their reaction. It was decided to ask for space on the program for three or four consecutive papers on fractures, the papers to be rendered by competent and suitable essayists.

It was felt that a fracture demonstration on the day of the program would be in order, demonstrations to be carried on one half hour before and after each session and during the intermissions in the sessions, on the day that the papers are presented. These demonstrations are to be as practical as possible and preferably to be directed along the lines of fractures discussed in the papers by the essayists.

Since the Red Cross is interested nationally in a program of first aid and treatment of fractures, it would seem advisable to obtain their cooperation in this demonstration. Sufficient booths should be placed in as central a position as possible and should be in operation on this one day only, the Red Cross indicating the emergency treatment of fractures as advocated by that organization, and the State Medical Association concerning itself chiefly with the question of practical points and standard methods in the treatment of these fractures.

In this way a program could be carried out at each Annual Session and possibly different fractures selected from year to year for discussion and demonstration.

It was recommended by the Fracture Committee to the Postgraduate Committee that each county medical society, or group of counties organized as one unit, be urged to devote one meeting each year to the consideration of fractures.

The Fracture Committee states that it will be glad to cooperate in the arrangement or suggestions for arrangement of a program, the furnishing of speakers and other necessary aid that can be rendered by this Committee. It was felt that this would be an important point because of the definite increase in the number and severity of fractures in this as in other states, due principally to automobile highway traffic and accidents associated with this method of travel.

The Fracture Committee feels that it is important to improve present methods of handling fractures both from an emergency standpoint and from the standpoint of treatment in the hands of the average physician.

M. L. KLINEFELTER, Chairman,  
FRANK D. DICKSON,  
WILLIAM J. STEWART,  
H. K. WALLACE,  
JAMES D. HORTON.

This report was referred to the Reference Committee on Miscellaneous Affairs.

The report of the Committee on Study of Medical Practice Act, Dr. W. H. Breuer, St. James, Chairman, follows:

## REPORT OF THE COMMITTEE ON STUDY OF MEDICAL PRACTICE ACT

A meeting of the Committee to Study the Medical Practice Act was held at the Daniel Boone Tavern, Columbia, November 5, 1937, at 10:30 a. m. Those present were: Dr. W. H. Breuer, St. James, Chairman; Dr. M. Pinson Neal, Columbia, Chairman of the Council; Dr. E. D. James, Joplin; Dr. J. Milton Singleton, Kansas City; Dr. Lee D. Cady, St. Louis; Dr. Dudley S. Conley, Columbia, President, and Mr. E. H. Bartelsmeyer, St. Louis, Assistant Secretary.

The report of the Committee submitted to and adopted by the House of Delegates at the Cape Girardeau Session was read.

On motion it was decided to consider the advisability of submitting a Basic Science Act to the next session of the State Legislature.



After a discussion, on motion the Committee approved the appointment of one member of the Committee whose duty would be to compile all available data with reference to basic science laws enacted in other states, draft a tentative act and submit it to the Committee at its next meeting (or to the House of Delegates). On motion Dr. Cady, who was in the chair momentarily, announced that Dr. Breuer was appointed to perform this assignment.

The Committee reviewed its previous action with reference to amending certain sections of the Workmen's Compensation Act.

On motion it was decided to postpone further considerations of amendments until the next meeting of the Committee.

Dr. Cady presented a tentative draft of a bill having for its purpose the selling of certain habit forming drugs to the public only on the prescription of a physician. It was decided that information be obtained concerning similar laws in other states and their effectiveness, and consider it again at the next meeting of the Committee (or present it to the House of Delegates).

On motion a proposed act giving physicians liens on moneys collected by injured persons in accident cases was referred to the Committee on Medical Economics with the suggestion that the hospital and dental associations might be conferred with to good advantage.

Dr. Cady presented details concerning a proposed Integrative Medical Practice Act. After a thorough discussion on motion it was decided that all members of the Committee be furnished copies of this proposed act as well as the present laws relating to the practice of medicine; that each member of the Committee submit to Dr. Cady his criticism, comments or suggestions within one month if possible; that Dr. Cady be authorized to consult the Association's attorney as to the legality of such an act and present these details at the next meeting of the Committee (or to the House of Delegates) for consideration.

Mr. Bartelsmeyer was instructed to inform Dr. Cotton of the Committee's regrets as to the illness of Mrs. Cotton which prevented Dr. Cotton from attending the meeting.

There being no further business the Committee adjourned at 3 p. m.

A meeting of the Committee will be held in April and a report thereof will be made to the House of Delegates.

W. H. BREUER, Chairman,  
LEE D. CADY,  
J. MILTON SINGLETON,  
T. W. COTTON,  
E. D. JAMES,  
O. C. GEBHART,  
M. PINSON NEAL.

Dr. Breuer, Chairman, reporting further, said: The Committee did some definite work toward correlating the different portions of the Medical Practice Act in Missouri which needed clarifying. They met in Columbia and took up some of these problems and appointed certain committees, especially a committee to study the question of a basic science law, get all information possible, correlate such information and bring it before the Committee at its next meeting; also information regarding the integration of the medical profession. The Committee met in Kansas City on April 14 and made a definite study of these questions, some of which are the same as were considered by the Committee on Public Policy.

The Antenuptial Examination Law as proposed by the Women's Chamber of Commerce was discussed by the Committee. Some information had been obtained from various members over the state, especially the Committee on Maternal Welfare and the Committee on Syphilis, but there are some parts of this law which did not seem to be exactly as they should, and if Missouri is

going to ask for an antenuptial examination law it should be one that has been properly studied and carefully worked out. Therefore the following resolution was prepared and is submitted to the House of Delegates for your consideration.

#### Resolution on Antenuptial Examination Law

WHEREAS, The Missouri Women's Chamber of Commerce has referred to us for consideration a proposed antenuptial examination act to prevent the marriage of persons infected with venereal disease, and

WHEREAS, It is deemed necessary for public health there be enacted an act of similar import, but the act proposed would prohibit a licensed practitioner of medicine from performing certain of the laboratory tests provided for therein; it fails to specify accurately how the material for microscopical examination for gonococci shall be procured or examined, or by what means the venereal diseases other than syphilis or gonorrhea may be diagnosed or excluded, and

WHEREAS, The proposed act makes no provision for the marriage of the venereally infected person who may or may not be in a non-communicable state, nor does it contain any provisions to waive the said restrictions for the purpose of legally safeguarding the legitimacy of a child which might be born out of wedlock to venereally infected parents, or for the solemnizing of so-called deathbed marriages, therefore be it

Resolved, That the House of Delegates does approve in principle of the main purpose of the proposed antenuptial examination act sponsored by the Missouri Women's Chamber of Commerce, but disapproves of the proposed law in its present form, and that this matter be referred to the Committee on Public Policy for consultation with the following committees: Maternal Welfare, Mental Health, Control of Syphilis and such other committees as are deemed necessary and further to make such suggested changes in the proposed act to the sponsors of the bill as may be deemed advisable.

Your Committee considered a proposed act for the integration of the medical profession of Missouri. This is a lengthy act and will require a lot of study on the part of each individual physician; also a lot of educational work must be done among the public and the legislators before this can be enacted into a law. In view of this, Dr. Lee D. Cady, St. Louis, a member of this Committee, has done an enormous amount of work and research and has spent a great deal of time getting this act in shape. This act should be properly studied, submitted in proper form and published in *THE JOURNAL* for constructive criticism by the membership at large. Your Committee therefore passed the following resolution which is submitted for your consideration:

#### Resolution on Integration of the Medical Profession

WHEREAS, It is known by the members of the Missouri State Medical Association that professional ethics and the public health and welfare have been, and will be abused by unqualified, quackish and dishonest persons, and public redress is slow, difficult or impossible to attain under our present medical practice act and inadequately financed legal methods, and

WHEREAS, The medical profession of the State of Missouri suffers criticism in the mind and respect of the public, and the public suffers the results of mismanaged medical practice, and

WHEREAS, If these matters of professional qualification, discipline and protection of public health were more directly in the control of those best qualified by training and knowledge—the medical profession—with legal power to act, public welfare would be better served; therefore be it

Resolved, That the proposed integrative medical practice act and other provisions be published in *THE JOURNAL* of the Association so that each member may study the same and offer criticism and suggestions for the information of the Committee and that the Council shall have the authority in its discretion to instruct the Committee on Public Policy to introduce in the General Assembly of 1939 suitable bills for passage, repeals and amendments necessary to accomplish these desired betterments of medical practice and public welfare.

As you know, the lawyers of this state have an integrating act embracing the legal profession which was approved by the Supreme Court and they are able to control and discipline their own membership. This Medical Practice Act is intended to do the same thing for the medical profession, give us power to discipline and control unethical practices by the profession itself.

We also offer the following resolution in regard to the restriction of the use of harmful drugs:

#### Resolution on the Restriction of Use of Harmful Drugs

WHEREAS, It has come to the attention of the medical profession, privately and through the professional and public press,

that there are several drugs and glandular preparations being exploited commercially which are harmful to the mental and physical welfare of the public because of their unrestricted use and abuse, and

WHEREAS, The use of barbituric acid derivatives, chloral, paraldehyde and sulphonal or their compounds are the hypnotics most commonly abused and therefore most commonly are involved in the development of nervous and mental afflictions, and

WHEREAS, Thyroid and dinitrophenol or dinitrocresol have been injudiciously exploited for the treatment of obesity and have caused ill health, cardiac disturbances and cataract formation, and

WHEREAS, Cinchophen and sulphanilamide are known to be dangerous to the health and life of susceptible individuals who may use them without the advice and care of a physician, and

WHEREAS, Androgenous and estrogenous hormone preparations are being advertised and sold to the public without due regard for the physical or mental needs of the individual thereby causing the user possible sexual or mental disabilities, and

WHEREAS, Benzedrine is being surreptitiously urged for public use as a means of combating fatigue and exhaustion when rest would be better than drugging tired bodies and brains, and this practice is especially dangerous when indulged in by drivers of motor vehicles, or by others upon whom the lives of the public may depend for safety, therefore be it

*Resolved*, That a proposed act restricting the use of harmful drugs be prepared by the Committee on Public Policy and after conference with the State Association of Pharmacists the bill so agreed upon be introduced in the General Assembly of 1939.

Your Committee approves the resolution and recommends its adoption.

Your Committee has given serious consideration to the preparation and introduction of an act which would require a uniform standard of training for all who wish to enter the field of the healing art.

The human body and the diseases to which it is subjected require a uniform knowledge of fundamentals or basic sciences, regardless of the methods of treatment used.

These basic sciences are: (1) anatomy, (2) physiology, (3) pathology, (4) bacteriology, (5) hygiene, (6) chemistry.

1. Anatomy, the study of the normal structure of the human body, is essential in order that the practitioner may recognize the abnormal conditions to correct intelligently such abnormalities by any method.

2. Physiology, the study of the normal functions of the organs of the body, is essential, otherwise one cannot know whether or not the organism is functioning normally; without such knowledge one cannot intelligently treat diseased conditions.

3. Pathology, the structural change in the body caused by disease, is essential in order to recognize and cope with disease.

4. Bacteriology is the study of germs which produce many infectious diseases such as tuberculosis, diphtheria, scarlet fever, whooping cough, pneumonia, syphilis, etc. It is essential in order that one may successfully combat these dreaded diseases.

5. Hygiene is essential in order to understand conditions concerned with the spread of disease and the prevention of epidemics for the preservation of public health.

6. Chemistry is essential in order that the practitioner may be familiar with the chemical composition of normal structures and fluids of the body as well as understand the composition of foods and medical substances.

A knowledge of these basic sciences is essential for anyone who practices healing.

The welfare of the community is protected only when its government establishes adequate qualifications for those who hold themselves out as competent to maintain the health of the people. A basic science law is regarded as the best modern means of determining these qualifications impartially.

A license to practice the healing art is taken by the

public as the state's stamp of approval on the practitioner's qualifications. The state should guarantee that fundamental education underlies that license.

The basic science law deals alike with all schools of healing and would elevate the standards of each. Each school would be wholly independent and could regulate its own professional requirements. Its exemptions prevent infringements on the rights of any healers already licensed.

The State Board of Examiners in the Basic Sciences would be made up of educators. High school graduates could take the examination.

The basic science law would permit each school of healing to have its own examining board and at the same time would guarantee a uniform minimum standard of education of all healers.

Basic science laws have been adopted by the legislatures of Arkansas, Arizona, Colorado, Connecticut, Iowa, Kansas, Michigan, Minnesota, Nebraska, Oregon, Washington, Wisconsin, and has been adopted by Congress for the District of Columbia. It has raised standards in all branches of the healing art where it is in force. It has proved its worth.

The basic science law is fair and impartial. It is progressive legislation, designed to meet modern needs. Missouri should adopt it.

Your Committee has prepared a tentative draft of a basic science act for introduction in the 1939 General Assembly and has submitted it to the Bureau of Legal Medicine of the American Medical Association for criticism and suggestions. Minor changes will have to be made before introduction. Your Committee recommends that the Committee on Public Policy be directed to introduce a basic science act in the 1939 session of the State Legislature.

In this connection I want to call to your attention that high schools, elementary schools and colleges of this state have absolutely quit teaching anatomy and hygiene. They teach a kind of hygiene—you would not know it—but no physiology at all. In talking to some of the instructors and heads of schools they seemed to shy away from the question and think it is not right. Some clubs have condemned the teaching of physiology and we must put on an educational program along this line. We must get the people interested in this basic science law, get them to understand that in the preparation of those who desire to take up the study of the healing art and become practicing physicians we must begin back with the basic science law, and the place to begin is in the high schools, as Dr. McComas said. A basic science law, fair and impartial, should be submitted and I believe if we could get approval of the osteopaths it could be passed at the next legislature.

I also feel, in view of the recommendations made here this morning regarding the Committee on Public Policy, that there should be a committee appointed to assist in carrying on this work—a committee composed of five members which should be an adjunct to the Committee on Public Policy and that will lay down a plan of campaign and also correlate the necessary information on the introduction of an antenuptial examination law, a basic science law and a law covering the restriction of harmful drugs. These are the things that should be referred to the next legislature and in order to get it properly before the public I would recommend that a committee of five be appointed to assist the Public Policy Committee in carrying out this program.

This report was referred to the Reference Committee on Miscellaneous Affairs, the resolutions being referred to the Reference Committee on Resolutions.

The report of the Committee on Medical-Legal Affairs, Dr. James R. McVay, Kansas City, Chairman, follows:



## REPORT OF THE COMMITTEE ON MEDICAL-LEGAL AFFAIRS

The Committee on Medical-Legal Affairs met in the St. Louis Medical Society Building on November 4, 1937, at the request of the Medico-Legal Committee of the St. Louis Medical Society.

Several hours were devoted to the presentation by Drs. Max J. Bierman, Paul R. Nemours and E. J. Helbing, of the information for the St. Louis Medico-Legal Committee which had been gathered together. After the Committee was heard and after discussion of the situation with Dr. Curtts H. Lohr, President of the St. Louis Medical Society, and Dr. D. S. Conley, President of the Missouri State Medical Association, the Committee recommended to the Council that the facts as presented did not justify the State Association to contribute funds from its treasury to bring suit against any organization at this time for the unauthorized corporate practice of medicine and, further, the Committee felt that adequate provision is made in the Constitution and By-Laws for the handling of any such differences of opinion in the local society and that it should be handled there rather than referred to the State Association.

JAMES R. McVAY, Chairman,  
DOWNEY L. HARRIS,  
C. T. RYLAND.

This report was referred to the Reference Committee on Miscellaneous Affairs.

The report of the Committee on Study of the Control of Syphilis, Dr. G. V. Stryker, St. Louis, Chairman, follows:

## REPORT OF THE COMMITTEE ON THE STUDY OF THE CONTROL OF SYPHILIS

The Committee held its initial meeting at the Missouri Hotel, Jefferson City, on Wednesday, September 22, 1937, at 12 o'clock noon with the following present: Drs. G. V. Stryker, St. Louis, Chairman; C. T. Ryland, Lexington; W. S. Sewell, Springfield; M. Pinson Neal, Columbia, Chairman of the Council; Dudley S. Conley, Columbia, President; John W. Williams, Jr., Jefferson City, Director, Division of Local Health Administration, State Board of Health; James W. Chapman, Jefferson City, Director, Division of Child Hygiene, State Board of Health, and Mr. E. H. Bartelsmeyer, St. Louis, Assistant Secretary. Drs. Quitman U. Newell, St. Louis; Charles C. Dennie, Kansas City, and Harry F. Parker, Jefferson City, State Health Commissioner, were unable to be present.

The second meeting of the Committee was held at the Daniel Boone Tavern, Columbia, October 21, at 11 a. m. Those present were: Drs. G. V. Stryker, St. Louis, Chairman; C. T. Ryland, Lexington; Quitman U. Newell, St. Louis; W. S. Sewell, Springfield; John W. Williams, Jr., Jefferson City, and Carl F. Vohs, St. Louis.

The third meeting of the Committee was held at the Missouri Hotel on Wednesday, March 2, 1938, at 12 o'clock noon, with the following present: Drs. G. V. Stryker, C. T. Ryland, W. S. Sewell, M. Pinson Neal, Dudley S. Conley, Carl F. Vohs, Chairman of the Committee on Medical Economics; A. R. McComas, Surgeon, Chairman, Committee on Health and Public Instruction (McAlester Foundation); Harry F. Parker, John W. Williams, Jr., James Chapman, Ralph R. Wilson, Kansas City, Chairman, Committee on Maternal Welfare, and E. H. Bartelsmeyer.

The Committee has carefully considered the many problems which were discussed at the Conference on Venereal Disease Control Work held in Washington, D. C., in December of 1936, as well as the several programs now under way in other states. Further discussions were carried on through correspondence.

Your Committee has endeavored to study in a comprehensive manner the problems dealing with the treatment and control of syphilis from the point of view of the public and the physician and submits the following comment to you for your consideration:

### QUESTIONS FOR SOLUTION IN THE SYPHILIS CONTROL PROGRAM:

1. *System of Notification.*—From the statistics presented by the State Board of Health it is apparent there is an urgent need of complete cooperation on the part of physicians to report all cases of syphilis on the card furnished by the Board of Health. Without the complete cooperation on the part of physicians in this respect (the basis of the solution to our problem) any program instituted will fail.

It was suggested that the present card for reporting syphilis be changed to include additional statistical information. Dr. Williams volunteered to secure the necessary information from the postal authorities so that the statistics added would be included in the franking privilege. The Committee was in accord with the rule to be promulgated by the Board of Health that the reporting of cases be by name or number. We have been assured by the Board of Health that the records will not be subject to public inspection. The new reporting card is now being developed and will shortly be distributed for use by physicians.

2. *Additional Laboratory Facilities Needed for the Diagnosis of Syphilis.*—It was the sense of the Committee that the state laboratory facilities be utilized and that if additional laboratory facilities are required such private laboratories as may be approved by the State Board of Health be included in the program.

3. *Distribution of Antisyphilitic Drugs.*—We recommend that the practice of supplying drugs for indigent patients be continued by the Board of Health through the attending physician.

4. *Free Treatment Facilities for Those Who Cannot Pay Physician's Fees.*—The plan of the Board to establish public health districts in rural sections composed of adjoining counties for the control of indigent patients suffering from communicable diseases including syphilis was approved. We believe in the establishment of these districts; that the view of the Committee on Medical Economics should be obtained so that the general program be unified and the districts operate as an economic unit for all indigents requiring medical attention.

It is desirable that the programs in the respective districts be supervised by a competent physician. This physician should be on a salary basis and chosen on the basis of competency. In larger communities where clinics may be established, the personnel should rotate the service and receive compensation for such service on a basis to be worked out by the Board of Health. This should be worked out in cooperation with the local county medical society. It is the plan of the State Board of Health, in those communities where public health districts have been or will be established, to secure the services of several local physicians in each respective district to administer antivenereal treatment. The Committee recommends that the local county medical society in cooperation with the Council of the district recommend one of its members, who is competent in work of this character, to the State Health Commissioner for such appointment to treat those indigent patients which are referred to him by the health officers supervising the district. This program is designed not to interfere with the practice of any physician who has an indigent patient under his care and the supplying of free drugs to the patient. Furthermore, if a local county is at the present time paying fees to physicians for the care of the indigent sick, this relationship must not be disturbed. All indigents, however, are to have free choice of physicians.

If the physician so chosen by the patient does not desire to treat the case, he will refer such patient to the district health officer who in turn will authorize treatment by the physician recommended by the society to treat such indigent cases. In those counties where the physicians are not organized as a county medical society it is recommended that the Councilor cooperate with the State Health Commissioner in the selection of the local physician. The fees to be paid to the local physician for such treatment will be worked out by the State Health Commissioner depending upon the amount of money available for this purpose and the amount of treatment found necessary to be given.

5. *The Physician's Part in the Application of Epidemiologic Methods for the Control of Syphilis.*—Educational prophylactic methods should be encouraged by local county medical societies by cooperation with the local district supervisor.

Assist in the tracing of contacts and seeking out sources of infection (infected individuals).

Assist in instructing the members and the public.

6. *Development of Minimum Standards of Treatment for Early Syphilis.*—The Committee believes standards should be developed covering the entire phase of the treatment of syphilis. The treatment should follow the outline and recommendation of the Cooperative Clinic Report on the treatment of syphilis.

7. *The Need of Additional Facilities Including Hospitalization.*—It is the sense of the Committee that where hospitalization is necessary, it is recommended.

8. *Methods for the More Adequate Prevention of Congenital Syphilis Through Recognizing and Treating the Disease Among Pregnant Women.*—The Committee recommends close cooperation with the State Association's Committee on Maternal Welfare in order to secure the most effective treatment.

9. *The Lines Along Which Information and Educational Programs Should Be Conducted.*—All instruction to the lay public should be conducted under the direction of the State Association's Committee on Health and Public Instruction (McAlester Foundation). Instruction to the physicians through the respective county medical societies should be directed by the Committee on Postgraduate Work. The cooperation of the two committees should be solicited when combined lay and professional programs are contemplated.

All lay meetings should be under the sponsorship of the county medical society with physicians as speakers.

10. *Quarantinable Disease.*—Syphilis under the police power of our statutes is a quarantinable disease. Supervisors of districts and local health officers should be informed that persons with infectious syphilis and refusing treatment be quarantined.

11. *Premarital Certificate.*—The Committee recommends submitting to the Missouri State Legislature a bill similar to the Illinois Premarital Certificate law recently enacted in that state. Such a law if enacted in our state would produce beneficial results and should be made an objective in our program.

G. V. STRYKER, Chairman,  
QUITMAN U. NEWELL,  
W. S. SEWELL,  
CHARLES C. DENNIE,  
C. T. RYLAND.

This report was referred to the Reference Committee on Medical Education and Public Welfare.

The report of the Committee on Missouri University School of Medicine, Dr. E. Lee Miller, Kansas City, Chairman, follows:

## REPORT OF THE COMMITTEE ON MISSOURI UNIVERSITY SCHOOL OF MEDICINE

The Special Committee, assigned with the duty of investigating the problem of the Medical School at the

University of Missouri in relationship to the establishment of a four year course, has investigated the problem and submits the findings of their investigation.

The problem concerns the Missouri State Medical Association from the following points of view:

1. What becomes of students who attend the University of Missouri? A survey of students attending the University of Missouri Medical School for the years from 1920 to 1931 is given in answer to this question.

A. Practicing: In Missouri, 48.6 per cent; outside Missouri, 51.4 per cent.

B. Of those transferring to Missouri schools: Locating in Missouri, 59.4 per cent; outside Missouri, 40.6 per cent.

C. Of those transferring to schools outside Missouri: Locating in Missouri, 42.2 per cent; outside Missouri, 57.8 per cent.

D. Those practicing in Missouri: In towns above 50,000, 49.4 per cent; below 50,000 population towns, 50.6 per cent.

The number of students was 498. The number practicing in Missouri is 191; practicing outside Missouri, 202, and deceased or no information had, 105. Only one student who has completed the two year course at Missouri has failed to find another school that would accept him.

2. Do Missouri students return after graduation to Missouri to practice or do they go elsewhere in greater numbers than the average in the United States? The following figures show that Missouri boys educated here or elsewhere return in the average proportion for the entire United States.

A. Students attending schools in state of birth: United States, 54.4 per cent; Missouri, 55.0 per cent.

B. In states with only state supported medical schools (seventeen states): Educate 44.0 per cent of those born in state; educated elsewhere, 56.0 per cent.

C. Excluding those states with only two year schools from above, the remainder (eleven states): Educate 57.7 per cent of those born in state; 42.3 per cent educated elsewhere.

D. States with both state supported schools and other medical schools: Educate 67 per cent of those born in state; 33 per cent educated elsewhere.

E. State with no state supported school: Educate 43 per cent of those born in state; 57 per cent educated elsewhere.

F. Excluding two year school from E: Educate 53 per cent of those born in state; 47 per cent educated elsewhere.

3. Is Missouri underpopulated or overpopulated with physicians? The following compares Missouri to the surrounding states: Supply of physicians, population physician ratio in United States, 1 to 784; in Missouri, 1 to 666.

Missouri ranks fourth in high population ratio, the three states higher being Colorado with a 1 to 583 ratio, New York with 1 to 614 and California with 1 to 621. Compared to states bordering Missouri Illinois has 1 to 693; Nebraska 1 to 798; Iowa 1 to 819; Tennessee 1 to 833; Kansas 1 to 907; Kentucky 1 to 941; Arkansas 1 to 949, and Oklahoma 1 to 996.

*Distribution of Physicians by Population Areas,  
States Bordering Missouri*

State	Less than 5000	5000 to 9999	10,000 to 24,999	25,000 to 99,999	100,000 and over
Illinois	1146	894	769	688	542
Nebraska	1166	543	599	406	464
Iowa	1054	607	427	676	548
Tennessee	1383	880	782	664	516
Kansas	1192	621	624	560	682
Kentucky	1324	846	673	591	470
Arkansas	1298	671	374	455	
Oklahoma	1541	710	637	520	521
Missouri	1149	705	683	646	408



Conclusion: Missouri, compared to any of the states in the Middle West, is overpopulated with physicians.

4. Are physicians under 51 years of age educated outside or inside of Missouri and where have they located? The following is a survey of physicians in Missouri, aged up to 51 years.

A. In Missouri: Educated in Missouri schools, 1238 or 58.4 per cent; educated in schools outside Missouri, 883 or 41.6 per cent.

B. In communities under 50,000: Educated in Missouri, 312 or 56.3 per cent; educated outside Missouri, 242 or 43.7 per cent.

C. In cities over 50,000: Educated in Missouri, 926 or 59.1 per cent; educated outside Missouri, 641 or 40.9 per cent.

Conclusions: (1) Missouri is slightly above the general average of states in supplying medical education to those born in the state. (2) The Missouri physician population ratio is much higher than the general United States ratio and ranks fourth of all states in the union. (3) Compared to the border states physician population ratio in rural sections is high. Its large cities have a much higher ratio.

5. Can Missouri University educate doctors more cheaply than is now possible elsewhere and what would be the cost of running a medical school of average high character? The mean average in the United States is approximately \$231,000 a year. The Committee believes that this is a figure in excess of the necessity of our problem. As presently run, Missouri ranks in the low-end brackets of cost for Class A education.

It was the opinion of your Committee that if we did want a medical school and if the figures showed the necessity for doctors to populate our area, that something be done immediately to meet the problem. It was felt proper that the best approach to meet the requirements of the situation would be to have an investigation by the officers of the Council on Medical Education and Hospitals of the American Medical Association, and that if a school was to be outlined and established it must finally meet the minimum requirements established by this Council. It was therefore thought more advisable to ask this Council's survey before we outlined any program because if a school were established it must finally be answerable and responsible to this Council.

Dr. William D. Cutter, Secretary of the Council on Medical Education and Hospitals of the American Medical Association, was asked to come to our state and make a survey of the location, facilities of our present medical school and recommend the Council's opinion regarding the establishment of a four year medical school in Missouri to be taught by the University of Missouri, and to inform us of the sufficiency of clinical material both at Columbia and at Kansas City for this four year medical school if it were found to be necessary.

Accordingly on August 4, 1937, Dr. Cutter came to Missouri, first going carefully over the present two year course at Columbia and then going to Kansas City and looking over the facilities of the hospitals in Kansas City which could be used for teaching. After a survey and conference with the Educational Committee of the Jackson County Medical Society, Dr. Cutter took his information to the Council and the Council reported on December 15, 1937. After describing the personnel and the manner of support of the University, the report states that the University is a two year medical school and reads as follows:

The first year class in the medical school is limited to forty, preference being given to residents of the state. "Attendance upon the University does not alter the status of a nonresident." The school feels an obligation to accept any Missourian who satisfies the minimum requirement, ninety hours. With few exceptions, all students who satisfactorily complete the two year course are able to transfer to other medical schools for their clinical years. The largest numbers go to Washington University, Louisville, Rush and Northwestern.

The laboratories are satisfactorily housed and adequately equipped.

The school has achieved an enviable reputation for training distinguished teachers and has created for itself an atmosphere of scientific investigation and scholarship.

Because the population of Columbia is only 14,967, the opportunities for clinical teaching are restricted, the University Hospital and Dispensary serving almost exclusively the student body. This handicap, however, does not appear to be serious for the medical students are able to make whatever adjustments are necessary in transferring to other schools.

### Possibilities of Extending the Course to Four Years

There are three ways in which the school might be expanded so as to comprise the full four year curriculum: Two clinical years might be added at Columbia, or at Kansas City, or the entire four years might be given in Kansas City.

Each of these programs would involve considerable expenditure and the first and the last, which are more desirable, would also be more costly. The experience of Virginia, Michigan and Iowa does not indicate that satisfactory clinical material can be obtained in small communities by the expedient of building state hospitals. Patients with acute diseases or injuries simply do not or cannot travel so far from their homes. In any case the maintenance of a large hospital would be a heavy burden on the state budget.

Kansas City undoubtedly possesses all of the clinical material necessary for a medical school but there is no assurance that the University could obtain the necessary control of the tax-supported institutions. Even for a two year school a building would be required to provide classrooms, offices, general laboratories and facilities for research. If the entire course were to be given in Kansas City the cost would obviously be much greater. There would also be serious objection to moving deeply rooted laboratory departments from their congenial environment at Columbia.

A divided school is not a happy arrangement. All of the evidence collected by the Council and also by a Special Committee of the British Medical Association leads inevitably to the conclusion that the entire medical curriculum should be regarded as a single unit, no part of which may be severed from the rest without loss.

### CONCLUSIONS

Since the present school at Columbia functions so satisfactorily, the Council sees no reason to undertake a program of expansion which would necessarily be costly and beset with many difficulties.

### Conclusions

1. The figures of Missouri's medical necessity show that Missouri is overpopulated with doctors in her larger centers, that the state has about the same distribution of doctors in the smaller centers as any other state in the union and that the conclusion would therefore be drawn that Missouri does not need another medical school.

2. If we established a school in the face of this medical overpopulation, the Council on Medical Education would not permit us to graduate anything but a very limited class, so few in fact it would not be financially justifiable to continue such a course.

3. This action on the part of this Council of the American Medical Association would not necessarily affect the graduates who would locate in Missouri but if we defied the Council and graduated a large number of doctors than our necessity for the care of our present population, we would meet with resistance by state boards in other states who would be loath to accept these graduates for examination against the recommendation of the American Medical Association.

4. The Council on Medical Education of the American Medical Association, by survey, has found that we now have too many graduates in the already established grade A medical schools and that these graduates are too numerous to be absorbed by America's medical necessity, and they are increasingly insistent that the classes in the already established medical schools be reduced in number.

We beg approval and acceptance of this report and request that this report be given to the Board of Curators of the University of Missouri through the President of the University of Missouri for their information.

We also wish to assure the Board of Curators and President of the University of Missouri that the State Medical Association is willing and anxious to cooperate

with them in any course which is found advisable and to be for the best interest of the medical profession of Missouri and for the good of the University as a whole.

E. LEE MILLER, Chairman,  
RALPH R. WILSON,  
DUDLEY S. CONLEY.

Dr. Miller, Chairman, reporting further, said: We are not asking you to adopt any recommendations in regard to this school. We are bringing you the fact that Missouri has 408 people to every doctor in towns of over 100,000, and in the state at large more doctors per population than any of the surrounding states. Can we teach medicine cheaper at the University of Missouri than in any other state? They informed us that they cannot maintain the Department of Medicine for less than \$231,000 a year. Would our legislature be willing to appropriate that amount of money for fifteen graduates?

These are the facts. Do with them as you please. I am greatly surprised at the conclusion we have to face. The old doctors are dying off and the new doctors have not come into Missouri quite as fast as a few years ago.

After discussion by Dr. L. M. Lyons, Pierce City, the report was adopted.

A motion by Dr. Ralf Hanks, Fulton, for a vote of thanks to the Committee was seconded and carried.

#### Appointment of Committee on Nominations

The President announced the appointment of the Committee on Nominations as follows:

E. Lee Miller, Kansas City, Chairman.  
N. R. Schuhmacher, Kearney.  
J. S. Gashwiler, Novinger.  
C. E. Burford, St. Louis.  
F. G. Mays, Washington.  
J. F. Harrison, Mexico.  
H. A. Lowe, Springfield.  
R. E. Breuer, Newburg.  
W. A. Beckemeyer, Sedalia.  
W. H. Barron, Fredericktown.

#### REPORT OF THE LOCAL COMMITTEE ON ARRANGEMENTS

DR. E. E. MANSUR, Jefferson City: The Local Committee on Arrangements has provided something for each day in the way of entertainment but due to the rush early this morning we have received but few registrations at the desk. You can realize how important it is that we know how many will be present at the various alumni luncheons tomorrow, the Maternal Welfare Dinner tonight and the stag party afterward. We therefore urge you to register as soon as possible for whatever entertainment you are interested in.

This report was accepted with a vote of thanks and appreciation to the Committee.

The report of the Committee on Constitution and By-Laws, Dr. Floyd H. Spencer, St. Joseph, Chairman, follows:

#### REPORT OF THE COMMITTEE ON CONSTITUTION AND BY-LAWS

The following amendments with the exception of the amendment to Article V of the Constitution were introduced at the last Annual Session. All amendments are to be acted on at the 1938 Session. The amendment to Article V of the Constitution was introduced at the meeting of the Council on November 5, 1936.

##### Amendments to Constitution

Amend Article IV entitled "Composition of the Association" by adding between the words "societies" and "who" of said article the following words "to which only white physicians shall be eligible" so that when amended said section shall read:

#### ARTICLE IV—COMPOSITION OF THE ASSOCIATION

This Association shall consist of members who shall be members of the component county medical societies to which only white physicians shall be eligible who have been certified to the headquarters of this Association, and whose dues and assessments for the current year have been received by the Secretary.

Amend Article V by striking out "(1)" and the words "and (2) the officers of the Association enumerated in Section 1 of Article IX of this constitution" and adding one new section so that when amended said article shall read:

#### ARTICLE V—HOUSE OF DELEGATES

SECTION 1. The House of Delegates shall be the legislative body of the Association and shall consist of delegates elected by the component county societies. The officers of the Association as enumerated in Section 1, Article IX, of this Constitution shall have the right to attend all meetings of the House of Delegates and all other rights of delegates in such meetings except the right to vote.

SEC. 2. The officers of the House of Delegates shall be a Speaker and a Vice Speaker elected by the delegates from their body. The Secretary of the Missouri State Medical Association shall be the Secretary of the House of Delegates.

Amend Section 1, Article IX—Officers, by inserting after the word "Treasurer" the words "Speaker and Vice Speaker of the House of Delegates" so that when amended said section shall read:

#### ARTICLE IX—OFFICERS

SECTION 1. The officers of this Association shall be a President, a President-Elect, three Vice Presidents, a Secretary, a Treasurer, a Speaker and a Vice Speaker of the House of Delegates and ten Councilors.

Amend Section 2, Article IX—Officers, by inserting after the word Council at the end of the fifth line the following sentences: "The delegates present from each Councilor District shall meet on the morning of the third day of the Annual Session and elect the Councilor from that District. In the event of death, resignation or removal of any Councilor, the Council may appoint a successor to serve until the vacancy is filled at the next Annual Session. No Councilor shall be eligible to serve more than three consecutive terms. All of the officers shall serve until their successors are elected and installed," so that when amended, Section 2, Article IX, shall read:

SEC. 2. The officers, except the Councilors, shall be elected annually. The terms of the Councilors shall be for two years; one half the members of the Council shall be elected each year. The Secretary and the Treasurer shall be elected by the Council. The delegates present from each Councilor District shall meet on the morning of the third day of the Annual Session and elect the Councilor from that District. In the event of death, resignation or removal of any Councilor, the Council may appoint a successor to serve until the vacancy is filled at the next Annual Session. No Councilor shall be eligible to serve for more than three consecutive terms. All of the officers shall serve until their successors are elected and installed.

##### Amendments to the By-Laws

Amend Section 4, Chapter III, by striking out the word "President" and inserting the word "Speaker" and by inserting after the word "resolutions" the words "on majority vote of the House of Delegates" so that when amended said Section 4 shall read:

SEC. 4. From among members of the House of Delegates the Speaker shall appoint Reference Committees to which reports and resolutions on a majority vote of the House of Delegates shall be referred as follows:



Reference Committee on Amendments to the Constitution and By-Laws.

Reference Committee on Resolutions.

Reference Committee on Miscellaneous Affairs.

Reference Committee on Medical Education and Public Welfare.

He shall also appoint a Committee on Credentials and such other committees as may be considered by him to be necessary.

Amend Section 1, Chapter IV, by striking out the word "President" and inserting the words "Speaker of the House of Delegates" in the first line and the words "each candidate for Councilor must be a resident of the District for which he is nominated" and by striking out the last sentence, "On the adoption of this section the nomination of the President for the succeeding year shall be made from the floor of the House," so that when amended said section shall read:

#### CHAPTER IV—ELECTION OF OFFICERS

SECTION 1. The Speaker of the House of Delegates on the first day of the Annual Session shall select a Committee on Nominations consisting of ten delegates, no two of whom shall be from the same Councilor District. The Committee on Nominations shall report the result of its deliberations to the House of Delegates in the form of a ticket containing the name of one member for each of the offices to be filled at that Annual Session excepting the President-Elect who shall be nominated from the floor of the House of Delegates.

Amend Section 1, Chapter V, by adding after the word "delegates" in the third line the words "until its Speaker is chosen" so that when amended Section 1, Chapter V, shall read:

#### CHAPTER V—DUTIES OF OFFICERS

SECTION 1. The President shall preside at all meetings of the Association and of the House of Delegates until its Speaker is chosen and shall appoint all committees not otherwise provided for; he shall deliver an annual address at such time as may be arranged and shall perform such other duties as custom or parliamentary usage requires. He shall be the real head of the profession of the state during his term of office, and as far as practicable, shall visit, by appointment, the various sections of the state and assist the Councilors in building up the county societies and in making their work more practical and useful.

Amend Section 2, Chapter V, by adding in the first line the words "The President and" and by deleting after the word "Council" in the second line the words "and of the Executive Committee of the Council ex officio" and by substituting for the words "those bodies" in the fourth line the words "the Council" so that when amended this section shall read:

SEC. 2. The President and the President-Elect shall be members of the Council and shall attend all meetings of the Council. Should the office of President-Elect become vacant through death or otherwise the Council may fill the vacancy until the next Annual Session of the Association.

FLOYD H. SPENCER, Chairman,  
FRANK R. TEACHENOR,  
O. B. HALL.

DR. O. B. HALL, Warrensburg: The Chairman of the Committee, Dr. Spencer, could not be present so it devolves on me to present this report. We wish to submit a supplementary report.

There being no specifications as to the time when proposed changes in the Constitution and By-Laws become effective, your Committee offers the following addition to its report:

That changes in the Constitution and By-Laws shall become effective immediately upon adjournment of the Annual Session at which the change was adopted.

Upon motion the addition to the report was adopted.

A motion by Dr. W. T. Elam, St. Joseph, to take up the report section by section was seconded and carried.

#### Amendment to Article IV of the Constitution

Amend Article IV entitled "Composition of the Association" by adding between the words "societies" and "who" of said article the following words "to which only white physicians shall be eligible" so that when amended said section shall read:

#### ARTICLE IV—COMPOSITION OF THE ASSOCIATION

This Association shall consist of members who shall be members of the component county medical societies to which only white physicians shall be eligible who have been certified to the headquarters of this Association, and whose dues and assessments for the current year have been received by the Secretary.

Upon motion of Dr. W. T. Elam, St. Joseph, duly seconded, the amendment was adopted.

#### Amendment to Article V, Section 1 of the Constitution

Dr. W. T. Elam, St. Joseph, moved the rejection of this amendment.

Dr. R. E. Schlueter, St. Louis, offered a substitute motion that the amendment be adopted:

DR. M. PINSON NEAL, Columbia: Last evening I had the pleasure of attending a dinner given for twelve of the fourteen living Past Presidents of this Association. I would it had been possible for every member of this Association to have been present and profited by the contact with these men who have in the past borne the responsibility of this State Association. The men who have served as presidents have too frequently stepped off the throne as though they had been thrown off and relegated to complete inactivity. I therefore move as an amendment to this Article V following the word "Constitution" in the fifth line the insertion of the words, "And the Past Presidents of the Association," so that Section of Article V when amended shall read:

#### ARTICLE V—HOUSE OF DELEGATES

SECTION 1. The House of Delegates shall be the legislative body of the Association and shall consist of delegates elected by the component societies. The officers of the Association as enumerated in Section 1, Article IX, of this Constitution, and the Past Presidents of the Association, shall have the right to attend all meetings of the House of Delegates and all other rights of delegates in such meetings except the right to vote.

Drs. Elam and Schlueter withdrew their motions in order that Dr. Neal's amendment might be considered. Vote on the amendment carried.

DR. L. M. LYONS, Pierce City: I move that Article V as amended be adopted.

DR. W. T. ELAM, St. Joseph: I move as a substitute motion that it be rejected.

DR. CURTIS H. LOHR, St. Louis: I would like to offer as an amendment to Section 1, Article V, that following the last word this be added: "However, Councilors shall have the right to vote for officers of the Association."

This amendment was adopted.

The President announced that adoption of the amendment would require a two thirds vote of the members present and on rising vote it was defeated. Roll call being demanded, again the amendment was defeated. Dr. E. L. Spence, Kennett, asked permission to change his vote and permission was granted.

On motion the House of Delegates recessed until 4 o'clock.

#### Monday, May 2, 1938—Afternoon Session

The adjourned session of the House of Delegates convened at 4 o'clock, Monday, May 2, with the President, Dr. Dudley S. Conley, Columbia, presiding.

The Report of the Committee on Constitution and By-Laws was further considered.

The Committee on Credentials reported the members of the House of Delegates totaled 104.

#### **Amendment to Article V, Section 2, of the Constitution**

Dr. L. M. Lyons, Pierce City, moved that this amendment be adopted. Seconded.

A substituted motion by Dr. W. T. Elam, St. Joseph, duly seconded, that this amendment be not adopted was lost on vote.

A roll call on the original motion showed the amendment was not adopted.

A motion by Dr. W. H. Breuer, St. James, that the remaining amendments be laid on the table lost.

#### **Amendment to Article IX, Section 1, of the Constitution**

On motion of Dr. L. M. Lyons, Pierce City, duly seconded, this amendment failed of adoption.

#### **Amendment to Article IX, Section 2, of the Constitution**

Dr. R. E. Schlueter, St. Louis, moved that this amendment be adopted and was duly seconded.

Dr. Curtis H. Lohr, St. Louis, offered the following amendment: To strike out the words in Section 2, "No Councilor shall be eligible to serve more than three consecutive terms" which was duly seconded.

A vote on the amendment carried.

A vote to amend Section 2, Article IX, of the Constitution as amended carried as follows:

Article IX, Sec. 2. The officers, except the Councilors, shall be elected annually. The terms of the Councilors shall be for two years; one half the members of the Council shall be elected each year. The Secretary and the Treasurer shall be elected by the Council. The delegates present from each Councilor District shall meet on the morning of the third day of the Annual Session and elect the Councilor from that District. In the event of death, resignation or removal of any Councilor, the Council may appoint a successor to serve until the vacancy is filled at the next Annual Session. All the officers shall serve until their successors are elected and installed.

#### **Amendment to Chapter III, Section 4, of the By-Laws**

Upon motion of Dr. R. E. Schlueter, St. Louis, duly seconded, this amendment was rejected.

#### **Amendment to Chapter IV, Section 1, of the By-Laws**

Upon motion of Dr. R. E. Schlueter, St. Louis, duly seconded, this amendment was rejected.

#### **Amendment to Chapter V, Section 1, of the By-Laws**

Upon motion of Dr. R. E. Schlueter, St. Louis, duly seconded, this amendment was rejected.

#### **Amendment to Chapter V, Section 2, of the By-Laws**

Upon motion of Dr. Victor E. Sherman, St. Louis, seconded by Dr. R. E. Schlueter, St. Louis, the amendment carried as follows:

Chapter V, Sec. 2. The President and the President-Elect shall be members of the Council and shall attend all meetings of the Council. Should the office of President-Elect become vacant through death or otherwise the Council may fill the vacancy until the next Annual Session of the Association.

A motion by Dr. Curtis H. Lohr, St. Louis, that the House of Delegates reconsider its previous action on Section 2, Article V, of the Constitution duly seconded was ruled out of order by the President. Dr. E. L. Spence, Kennett, offered a similar motion which was duly seconded and ruled out of order by the President.

An appeal from this ruling being made a roll call vote was taken and the Chair overruled.

On vote the motion to reconsider the amendment failed.

The Secretary read various telegrams and communications, among them an invitation from Excelsior Springs to hold the 1939 meeting in that city.

Dr. M. Pinson Neal, Columbia, Chairman of the Council, read the report of the Council as follows:

### **REPORT OF THE COUNCIL**

The Council has held three meetings since the Cape Girardeau Session. The first meeting was held July 14, 1937, at the Melbourne Hotel, St. Louis, Dr. M. Pinson Neal, Columbia, Chairman, presiding. (The minutes of this meeting were published in the August, 1937, issue of *THE JOURNAL*.)

In view of the divergence of opinion at the Cape Girardeau Session of the House of Delegates concerning the legality of changes made in the composition of the Council, the Chairman informed the Council that he had discussed this question with officials of the American Medical Association who advised that an attorney be invited to give an opinion on the question. Dr. Neal informed the Council that he had sought this opinion from Judge Fred L. English, our attorney, and that Judge English ruled that the redistricting was valid.

At the request of the Chairman Dr. Goodwin pointed out the various sections of the Constitution and By-Laws referring to the Council and Councilors and reviewed briefly the duties of the Council.

Drs. W. H. Breuer and M. Pinson Neal, Delegates to the Atlantic City Session of the American Medical Association, discussed matters brought out at that Session, among these the address of United States Senator J. Hamilton Lewis of Illinois, which was published in the June 26 issue of the *Journal* of the American Medical Association, and the recommendations on contraceptives, which were published in the July issue of our *State Association JOURNAL*.

The Council went on record as being opposed to state medicine in any form and ordered that the Board of Trustees of the American Medical Association be informed of this action. The talk by Senator Lewis had caused confusion as to the status of the probability of state medicine and its relationship to the Social Security Act. It was brought out in the Council session that state medicine was not a part of the Social Security Act at present but that there was a possibility of such a clause being introduced in the Congress, although such action had not been taken as yet. Since the subject had been brought directly before the Session of the American Medical Association and since the American Medical Association is at present studying the probable outcome of the situation some members of the Council debated whether it would be wise to await the conclusions of the American Medical Association before taking any action. It was decided, however, that the stand of the Missouri State Medical Association should be made clear without delay and the motion opposing state medicine in any form carried.

Dr. Conley announced appointments on the Committee for the Study of the Control of Syphilis as follows: Dr. G. V. Stryker, St. Louis, Chairman; Dr. Charles C. Dennie, Kansas City; Dr. W. S. Sewell, Springfield; Dr. Quitman U. Newell, St. Louis, and Dr. C. T. Ryland, Lexington.

Dr. Carl F. Vohs, St. Louis, Chairman of the Committee on Medical Economics; Dr. Ralph R. Wilson, Kansas



City, Chairman of the Committee on Maternal Welfare, and Mr. E. H. Bartelsmeyer, St. Louis, Assistant Secretary, were designated to cooperate with the State Board of Health to make a survey of medical facilities available in rural areas.

Dr. Borden S. Veeder and Dr. Maurice J. Lonsway, St. Louis, were appointed as advisory members of the Committee on Maternal Welfare.

The appointments were approved by the Council.

The Secretary read a letter from the Commissioner of Internal Revenue, Washington, D. C., ruling that the Missouri State Medical Association is exempt from taxation under the Social Security Act. The commissioner further ruled that the Missouri State Medical Association is exempt from payment of income taxes.

The Secretary presented a letter from Dr. Edward J. Helbing, secretary of the Medicolegal Committee of the St. Louis Medical Society, requesting the State Association to contribute to the medicolegal fund of the St. Louis Medical Society, the purpose of the fund being to defray the expenses of proceedings toward the goal of a decision by the supreme court of Missouri upon the legality of the corporate practice of medicine. On motion the Committee on Medical-Legal Affairs of the State Association was instructed to act as a fact-finding body to study the problem, including conference with the committee of the St. Louis Medical Society, and report to the Council at the November meeting.

A letter from the Woman's Auxiliary was read expressing their appreciation of the assistance and helpful cooperation of the Association during the last year.

Resolutions on the death of Dr. M. P. Overholser, Harrisonville, were adopted.

The Secretary was instructed to invite to any Council meeting the chairman of any committee or any member who has any special problem to present to the Council.

Annual Councilor District meetings to which all officers of the Association would be invited were discussed. Several Councilors reported that plans for such meetings are now contemplated and that their plans were meeting with a hearty response in their districts and that excellent meetings were expected.

Attention was called to Chapter IX, Section 10, of the By-Laws in which secretaries of county societies are instructed to notify their Councilor of society meetings. The Secretary was instructed to call this to the attention of county society secretaries.

Dr. Harry F. Parker, State Health Commissioner, presented a brief talk outlining the various problems confronting the State Board of Health.

Councilors were made associate editors and the Editor was instructed to publish under the name of the Councilor material which the Councilor may wish to have appear in *THE JOURNAL* concerning affairs in his district.

The Committee to Study the Medical Practice Act was asked to report on some phases of its work at the November meeting of the Council.

Dr. A. J. Campbell, Sedalia, discussed the plan of medical care for clients of the Resettlement Administration.

A Committee on Membership was appointed as follows: Drs. R. B. Denny, Creve Coeur, Chairman; A. H. Marshall, Charleston; A. S. Bristow, Princeton; H. L. Kerr, Crane, and H. B. Goodrich, Hannibal.

Authority was granted the Committee on Scientific Work to invite guest speakers for the Jefferson City Session.

The General Committee on Arrangements for the Jefferson City Session was appointed as follows: Dr. W. H. Breuer, St. James, Chairman; Dr. A. J. Campbell, Sedalia, and Dr. Curtis H. Lohr, St. Louis. The

Committee was authorized to select the dates for the 1938 Session.

The Secretary was instructed to communicate with all county medical society secretaries and inform them that all delinquent members must either pay their dues or be dropped from the rolls or, if in the opinion of the county medical society, a member is financially unable to pay all delinquent dues, he may pay the current year's dues and all other delinquent dues will be charged off.

The Secretary of the Association was empowered to appoint the required number of assistants for the proper conduct of his office but that the appointment of the Assistant Secretary and Business Manager be subject to the approval of the Council.

The Chairman announced that Councilors would be allowed 5 cents per mile travel via auto plus such other expenses as may be necessary for the Councilor to incur in the discharge of his duties as Councilor in his respective district, this not to include expenses while attending the Annual Session.

Dr. E. J. Goodwin, St. Louis, was elected Secretary-Editor, and Dr. John R. Caulk, St. Louis, was elected Treasurer. On recommendation of Dr. Goodwin the appointment of Mr. E. H. Bartelsmeyer, St. Louis, as Assistant Secretary and Business Manager of *THE JOURNAL* was approved.

The second and the annual meeting of the Council was held in Columbia at the Sinclair Pennant Hotel, November 23, 1937, Dr. M. Pinson Neal, Chairman, presiding. (The minutes of this meeting were published in the December, 1937, issue of *THE JOURNAL*.)

The minutes of the meeting of the Council held in St. Louis on July 14 were approved as published in *THE JOURNAL*.

The Chairman appointed the following members to the Committee on Auditing and Appropriations: Drs. A. S. Bristow, Princeton; Curtis H. Lohr, St. Louis, and A. J. Campbell, Sedalia.

On recommendation of Dr. W. H. Breuer, St. James, Chairman of the General Committee on Arrangements for the 1938 Annual Session, the Council approved the dates of May 2, 3 and 4 for the meeting in Jefferson City with the understanding that the Capitol would be available as a meeting place.

The report of the Treasurer, Dr. John R. Caulk, was referred to the Committee on Auditing and Appropriations as follows:

#### STATUS OF FUNDS

General Fund .....	\$ 1,499.95
Defense Fund .....	1,420.76
Legislative Fund .....	3,606.63
Sinking Fund .....	4,269.00
	<hr/>
	\$10,796.34

The Secretary reported that the membership of the Association at the present time numbered 3233, an increase of eighteen since January 1, 1937.

The application of Morgan County Medical Society for a charter was approved. The Secretary reported that a check of the county medical societies holding charters would be made and duplicate charters would be issued to those societies whose charters had been lost.

Resolutions from the Mississippi Valley Medical Association, the Illinois State Medical Society, the Washington State Medical Association and the Oregon State Medical Society opposing Senate Joint Resolution No. 188, introduced by Senator J. Hamilton Lewis of Illinois, were presented.

A resolution similar to one adopted by the Washington State Medical Association at its annual session, July 21, 1937, was adopted as follows:

WHEREAS, We believe that members of the medical profession who are not members of their local medical societies do not have at heart the welfare of their professional fellows or that of the welfare of the practice of medicine and surgery;

WHEREAS, We believe in organized medicine; we believe that the American College of Surgeons is founded on the faith it has in the members of organized medicine and their ability to improve the general conditions of the practice of medicine as well as surgery; therefore be it

Resolved, That the Missouri State Medical Association request that the American College of Surgeons make it a requirement for the rating of "Approved" for all hospitals that no one who is not a member of his local medical society be made a member of the staff of said hospital, and be it also

Resolved, That the American College of Surgeons be requested to remove from their list of "Standardized Hospitals" all hospitals who have on their staffs physicians and surgeons who are not members of their local medical society, excepting in the instances of those physicians and surgeons who have not yet been able to meet the time limits prescribed by the constitution or by-laws of the individual societies, and be it also

Resolved, That a copy of these resolutions be also sent to the Council on Medical Education and Hospitals of the American Medical Association so that a hospital that does not conform to these resolutions shall not be recognized as a teaching hospital for interns.

The Secretary reported that a report had been made to the Missouri Unemployment Compensation Commission, Jefferson City, to determine the Association's liability under the Missouri Unemployment Compensation law.

The invitation of the St. Louis Medical Society to the American Medical Association to hold its 1939, 1940 or 1941 session in the City of St. Louis was unanimously endorsed. The Council offered the assistance of the Missouri State Medical Association to the St. Louis Medical Society in securing this meeting.

The Secretary read a letter from Dr. John P. Peters, secretary of the Committee on Physicians, enclosing principles and proposals carrying the signatures of 430 physicians. The Secretary presented a statement authorized by the Board of Trustees of the American Medical Association for publication on November 27 in the *Journal of the American Medical Association* and released to the press for publication on November 21. The Council instructed the Secretary to acknowledge the communication from Dr. Peters and that permission be obtained from the Editor of the *Journal of the American Medical Association* to reprint the editorial in THE JOURNAL of the Missouri State Medical Association. The statement of the Board of Trustees of the American Medical Association appears on page 454 of the December issue.

The Secretary was instructed to communicate with our Senators and Representatives in Congress emphasizing the importance of securing as soon as possible adequate legislation relating to foods, drugs, diagnostic and therapeutic devices and cosmetics either by amendment of present food and drug laws or by the passage of new laws.

The matter of the appointment of a special committee on automobile accidents to devise some plan of cooperation with other agencies which might be helpful in the problem of automobile accidents was referred to President Conley to be included in his recommendations to the House of Delegates at the forthcoming Annual Session.

The Chairman reported that at the invitation of Dr. Ellis Fischel, St. Louis, Chairman of the Missouri State Cancer Commission, the members of the Council had met with the Commission in St. Louis on November 3. Dr. Dudley A. Robnett, Columbia, presented to the Council an abstract of a statement which he had presented at this joint meeting.

The Council went on record as favoring the central part of the state as a location for the State Cancer Hospital. The Secretary was instructed to send a telegram to Dr. Ellis Fischel, the Chairman of the Commission, and a copy of the telegram to Honorable Lloyd C. Stark, Governor of Missouri.

Dr. John W. Williams, Jr., Assistant State Health

Commissioner, presented to the Council the program of the State Board of Health relative to immunization clinics.

The matter of providing speakers for addressing lay audiences was discussed. President Conley was requested to confer with those agencies arranging lay meetings in the field of health and public welfare with the view of coordinating all efforts for the welfare of the people.

Mr. Lou C. Lozier, Assistant Chief Counsel of the Missouri State Highway Department, requested cooperation of our Association in providing medical services to the construction and maintenance employees of the Highway Department temporarily disabled in line of duty. Mr. Lozier pointed out that in several states this service was being rendered under a schedule of fees approved by the state medical association. On motion the matter was referred to the Committee on Medical Economics with instructions to confer with representatives of the Missouri State Highway Commission to work out the best plan possible for the care of such injured employees and submit its report to the House of Delegates at the Jefferson City Session.

Since the reports of all committees submitted to the Council will be reported in full for consideration and final action to the House of Delegates at the next annual session, only the Council's action relative to these reports was published at this time.

The report of the Committee on Defense was received.

The report of the Committee on Maternal Welfare, presented by Dr. Ralph R. Wilson, was received. The Committee recommended the submission to the state legislature of a bill similar to the Illinois Marriage Certificate law recently enacted in that state. The Council approved this recommendation and referred the matter of drafting a bill to the Committee on Public Policy for action by the House of Delegates. The recommendation of the Committee that lectures on "Maternal and Child Welfare" be delivered throughout the state by the members of the Missouri State Medical Association in cooperation with the State Board of Health's program on maternal and child welfare through the Home Economics, Extension Department, University of Missouri, or any other organization of similar deserving character, was endorsed by the Council and support pledged.

The report of the Committee on Medical-Legal Affairs was presented by Dr. James R. McVay, acting chairman. The Committee reported that a joint session with the Medicolegal Committee of the St. Louis Medical Society had been held in St. Louis on November 4 and data had been submitted by the committee of the St. Louis Medical Society concerning replies to questionnaires from members of the St. Louis Medical Society regarding the corporate practice of medicine as well as the status of a suit filed against the Missouri Pacific Hospital Association, St. Louis. The Committee appreciated the helpful cooperation of the St. Louis committee and the willingness of the members to explain in detail any questions submitted. The Committee felt that the facts presented did not justify or warrant the State Association to contribute funds from its treasury to join in the suit against the Missouri Pacific Hospital Association for the unauthorized corporate practice of medicine and further that regardless of the merits of this particular suit it was self evident the treasury of the State Association could not in any event assume such costly litigation which was estimated between \$10,000 and \$25,000. The report of the Committee was approved and the recommendations endorsed by the Council.

The report of the Committee for the Control of Syphilis was accepted.

The report of the Committee on Fractures was received. The recommendation that three or four papers on the subject of "Fractures" be arranged for consecu-



tive presentation at the forthcoming Annual Session was referred to the Committee on Scientific Work. The recommendation that booths be assigned to the Committee to demonstrate fractures in cooperation with the Red Cross was referred to the Local Committee on Scientific Exhibits for the next Annual Session. The recommendation that county medical societies by Councilor District or individually be encouraged to hold at least one meeting a year on the topic of "Fractures" and that speakers would be furnished by the Committee in cooperation with the Committee on Postgraduate Course was referred to the Councilors of the respective districts for their guidance in planning councilor district meetings.

The report of the Committee on Survey of Medical and Hospital Facilities Available in Rural Areas on the progress of its work was received.

The report of the Committee on Health and Public Instruction (the McAlester Foundation) presented by Dr. A. R. McComas, Chairman, was received. The Committee was authorized in the name of the Association to prepare information on medical and health topics for submission to the Extension Service of the University of Missouri for printing and distribution to lay groups. The Committee was authorized to utilize the facilities of broadcasting station KFRU and others on request in presenting health educational radio programs to the public. The Committee was authorized to spend such sums as may be necessary in the conduct of this work.

The report of the Committee on Cancer, presented by Dr. Dudley A. Robnett, was accepted.

Dr. R. B. Denny, Chairman of the Council Committee on Membership, reported that since January 1, 1937, one hundred thirty physicians had been elected as new members of the Association and twenty reinstated, that fourteen applications are pending election by the St. Louis Medical Society and several applications are pending in other county medical societies. The report was approved.

The reports of the Councilors on activities in their respective districts were received.

The following resolutions introduced by Dr. E. P. Heller, Kansas City, were adopted:

A Resolution concerning the Control and Supervision by the Organized Medical Profession of Social-Medical Economic Affairs, and their isolation during the period of probation.

WHEREAS, It has long been the policy and practice of the American Medical Association to guide its course in response to the expressed desires of the component units of the profession, and since the American Medical Association is so constituted as to be without original power to act in matters of policy, and

WHEREAS, American medicine is now going through a period of self-study and adjustment to various social and economic currents and trends common to all other American institutions, and since our official national organization, the American Medical Association, stands in need of renewed support and a reaffirmation of our belief in its policy as applied to current problems, and

WHEREAS, It is incumbent upon the local units to voice their sentiments through official channels whenever issues and events demand united action to preserve a status for our profession in which the public good and the welfare of the sick and afflicted of the nation shall be properly safeguarded, as against the selfish and commercial instincts of individuals within and without the ranks of medical organization, therefore be it

Resolved, That the Council of the Missouri State Medical Association go on record as favoring a more positive attitude by the American Medical Association toward social-economic experiments with the following provisos:

1. That attempts to change the methods of providing medical and hospital care of the medically indigent sick and afflicted of our nation be conducted under the watchful eye of the American Medical Association through duly assigned representatives and through officers of local units of the organized profession;

2. That experimental work in medical economics be permitted by and with the approval of the American Medical Association and the state associations in accordance with the principles previously adopted by the House of Delegates of the American Medical Association, provided the experiments be confined to units not larger than a single state, with full and complete recording of all financial, actuarial, morbidity

and other statistical data, which shall be subject to the scrutiny of assigned representatives and the Bureau of Medical Economics of the American Medical Association;

3. That an accounting of progress and results of these various experiments under modern American conditions be an obligation to be met annually in the form of a report to the Bureau of Medical Economics, and through it to the House of Delegates and officers of the American Medical Association at the annual convention;

4. That, in keeping with the broad analytical view of social-economic conditions which should be as much a part of our attitude as citizens as is an open mind and scientific investigation a part of our attitude and policy as physicians, we should judge the merits of the various state and local programs solely from the standpoint of the greatest good to the particular community affected and to the nation as a whole;

5. That all publicity possible be given to favorable and unfavorable programs in the *Journal of the American Medical Association* to the end that prejudices may be avoided and a just decision reached, in order that the profession may work for the common good in harmony born of reason;

6. That approval of the House of Delegates of each state association shall be required at the end of each year of operation in order for the local unit to remain in good standing and in order that its endeavors to work out its problems may be properly controlled, finally be it further

Resolved, That a copy of this resolution be submitted to the officers of the American Medical Association, and published in the next issue of the Missouri State Medical Association Journal as the opinion of this Council.

The Secretary was instructed to send letters of condolence to Drs. Logan Allee, Eldon; John R. Caulk, St. Louis; Guy Titsworth, Sedalia; T. C. Hempelmann, St. Louis, and Mr. Ed. Watson, honorary member, Columbia, who are now ill, expressing the hope for their permanent and rapid convalescence.

The report of the Committee on Auditing and Appropriations was adopted and the budget for 1938 was approved as follows:

Salaries (Office and JOURNAL) .....	\$12,500.00
Printing of JOURNAL .....	6,300.00
Legislation .....	1,000.00
Defense .....	1,000.00
Postage .....	700.00
Postgraduate Work .....	1,000.00
Printing and stationery .....	800.00
Traveling expenses, Secretary and Assistant Secretary .....	1,100.00
Telephone and telegraph .....	800.00
Rent of office and light .....	1,600.00
Meetings (Annual Session, Council, Committees) ...	3,000.00
Miscellaneous .....	800.00
Total .....	\$30,600.00

It was decided to hold the next meeting of the Council in Kansas City in April, 1938.

The Council of the Missouri State Medical Association met in Kansas City at the President Hotel on April 15, 1938, at 10:30 a. m. Dr. M. Pinson Neal, Columbia, presided.

The minutes of the Council meeting held in Columbia on November 23, 1937, were approved as amended.

Dr. W. H. Breuer, St. James, Chairman of the Committee on Arrangements for the 1938 Session, reported that the Local Committee on Arrangements of the Cole County Medical Society was putting forth every effort possible to make the Jefferson City Session an outstanding one; that an invitation folder had been sent to every member of the Association outlining the program and the entertainment features of the Session. On motion the report was approved.

President Conley submitted the appointment of Dr. Ralph L. Thompson, St. Louis, as Assistant Treasurer in order to facilitate the signing of checks during the temporary disability of Dr. John R. Caulk, St. Louis, Treasurer. On motion the appointment was approved. President Conley reported that owing to illness, Dr. W. L. Allee, Chairman of the Committees on Public Policy and Medical-Legal Affairs, had resigned; that to fill these vacancies he had appointed Dr. J. W. Allee, Eldon, on the Committee on Public Policy, and Dr. C. T. Ryland, Lexington, on the Committee on Medical-Legal Affairs; Dr. J. F. Harrison, Mexico, Chairman of the Committee on Public Policy, and Dr. J. R. McVay, Kan-

sas City, Chairman of the Committee on Medical-Legal Affairs. On motion these appointments were confirmed.

The report of the treasurer was received as follows:

March 31, 1938.

STATUS OF FUNDS

General Fund .....	\$ 6,915.81
Defense Fund .....	1,420.76
Legislative Fund .....	5,449.63
Sinking Fund .....	4,269.00
	<hr/>
	\$18,055.20

The Secretary reported that thirty-seven county medical societies had made application for duplicate charters. On motion the Secretary was instructed to issue these duplicate charters requested and to those societies who may apply in the future.

A communication from the Chariton County Medical Society was read as follows:

"After due deliberation a motion was made and carried unanimously that the Chariton County Medical Society go on record as being in favor of the passage of a Basic Science Law and that this information be sent to our State Senator and our County Representative and the State Medical Association; also that our delegate be instructed to present the same at the next meeting of the Missouri State Medical Association.

"A similar motion was made and unanimously carried that Chariton County Medical Society go on record as being opposed to state medicine and send copies to above named County Representative and State Senator.

"(Signed) GEO. W. HAWKINS, M.D., Secretary,  
"Chariton County Medical Society."

The Secretary was instructed to acknowledge the letter and inform the Society that a Committee was at the present time considering a basic science bill for presentation to the General Assembly of Missouri at the proper time.

A communication from Jackson County Medical Society was read as follows:

"In its meeting of February 15, 1938, the Executive Council of Jackson County Medical Society approved the proposed Marriage-Health law for the State of Missouri."

The Secretary was instructed to acknowledge receipt of this letter and inform the Jackson County Medical Society that a Committee was at the present time considering a proposed Marriage-Health act for presentation to the General Assembly of Missouri at the proper time.

The Secretary read a letter from Dr. Olin West, Secretary of the American Medical Association, acknowledging the joint invitation of the St. Louis Medical Society and the Missouri State Medical Association extended to the American Medical Association to hold its 1939, 1940 or 1941 Session in the City of St. Louis.

On motion a confidential communication from the Kansas State Medical Society was referred to the Committee on Medical-Legal Affairs for investigation and cooperation with the Kansas State Medical Society. This communication refers to the activity of the Nichols Sanatorium, Savannah, Missouri.

The Secretary reported that a request made by the Metropolitan Life Insurance Company for the Association's approval of a film on "Pneumonia" had been referred to the Committee on Health and Public Instruction of the St. Louis Medical Society.

The Secretary reported on the meeting of the Northwest Regional Conference held in Chicago, February 13, 1938, in which the Committee on Medical Economics and the secretaries of sixteen constituent state associations participated; that the general subject of the Conference was "Medical Care of All the People" and that Dr. R. G. Leland, Director of the Bureau of Medical Economics of the American Medical Association, explained in detail the purposes, objectives and scope of the proposed study of medical and hospital facilities by all county medical

societies in the various states. The Secretary further stated the conference was purely an informal one and that it had been the custom of one state association each year to be host at a luncheon to the delegates from the other states and that the Missouri delegates had agreed to sponsor the luncheon at the February, 1939, meeting. On motion the report was received and the Council appropriated the necessary funds to meet the expense of the luncheon for the 1939 meeting.

A member of the Association requested a ruling of the Council as to whether a county medical society had the authority to pass a resolution which forbade members from making any talks on medical topics without permission from the committee on public relations of that society. After discussion and on motion the Council ruled that the matter of lay education was subject to the jurisdiction of the local county medical society.

The Council recessed in order to review the film "The Birth of a Baby."

The Council reconvened at 2:15 p. m.

On motion the Council approved the showing of the film "The Birth of a Baby" to lay audiences in Missouri under the supervision of the Committee on Maternal Welfare and with the approval of local county medical societies.

On motion the action of the Chairman of the Council with reference to suggestions given to the State Commissioner of Health regarding "osteopathic participation in maternal and child health programs in Missouri" was approved.

On motion the joint action of the President, Dr. Conley, and the Chairman of the Council in submitting recommendations to county and field agents participating in and cooperating with health programs was approved.

Dr. Harry F. Parker, State Commissioner of Health, informed the Council concerning the severance of reciprocal relations between the licensing boards of Missouri and Texas.

Dr. Parker discussed at length the activity of the State Board of Health with reference to the so-called refresher courses in obstetrics and pediatrics.

On motion the Council approved the plan for the supervision and direction of these courses to be under the State Commissioner of Health and that the Committee on Maternal Welfare act in an advisory capacity.

Dr. Parker then discussed the policy of his office in the distribution of biologicals. On motion the Council extended a vote of confidence to the State Commissioner of Health and the State Board of Health, feeling that they will administer this service to the extent of their power to protect the interests of organized medicine.

Dr. Parker then explained the activity of his department in regard to its program for the control of syphilis.

The Chairman reported on the personnel of county health offices in Missouri.

The following letter from Dr. Olin West, Secretary of the American Medical Association, was read and ordered filed:

"Dear Dr. Neal:

"I am very glad to have your letter of April 4.

"Unfortunately, the same question that is raised in your letter is apparently being submitted with constantly increasing frequency to the judicial bodies of county and state medical associations and of the American Medical Association. I understand that it is the intention of the Judicial Council of the American Medical Association to discuss this question in its official report to be submitted to the House of Delegates at the San Francisco Session.

"While it is true that there is no specific mention in the 'Principles of Medical Ethics' pertaining to the attitude that the physician should take toward cultists, it is nevertheless true that certain general statements made in some sections of the 'Principles of Medical Ethics' clearly indicate that physicians should not maintain pro-



professional relations with cult practitioners. I take pleasure in enclosing a copy of the 'Principles of Medical Ethics.'

"As I see it, physicians who believe in the teachings and practices of scientific medicine should avoid any professional contact with cultists. Either the theories and practices of scientific medicine are right and those of the cultists are wrong or the cultists are right and scientific medicine is wrong. The physician who consults with cult practitioners practically acknowledges before the public that there is merit in the teachings and practices of cultists and thereby virtually acknowledges a lack of confidence in scientific medicine. My own observations while engaged in medical practice were all to the effect that the cult practitioner never fails to take full advantage of opportunities offered him through the establishment of professional relations with physicians.

"Very sincerely yours,

"(Signed) OLIN WEST."

Dr. Heller presented the following resolutions approved by the Executive Committee of the Kansas City Society of Ophthalmology and Otolaryngology, March 1, 1938:

#### Resolution Regarding Care of Indigent Patients by the Missouri Commission for the Blind

WHEREAS, There has been considerable dissatisfaction expressed by ophthalmologists throughout the state regarding the handling of indigent patients by the Missouri Commission for the Blind and the Department for Prevention of Blindness, and

WHEREAS, Exorbitant demands have been made upon examiner's time and skill, without payment therefor, and

WHEREAS, Patients have been recommended for indigent care who had been known to be able to pay for services, and

WHEREAS, Executives and field workers are receiving out of state funds adequate remuneration for services, and optical companies and druggists for merchandise supplied; now therefore be it

Resolved, That an organized effort be made to secure remuneration for services by ophthalmologists, and be it further

Resolved, That the Kansas City Society of Ophthalmology and Otolaryngology present this resolution to the Executive Council of the Jackson County Medical Society with request that delegates to the convention of the Missouri State Medical Association be instructed to present the matter to the House of Delegates for its consideration and to recommend that a committee be appointed to work with the State Board of Eleemosynary Institutions in an effort to reach a solution of this problem.

Approved by the Executive Committee of the Kansas City Society of Ophthalmology and Otolaryngology, March 1, 1938.

On motion the Council approved the appointment of a Council Committee to study this problem of the care of the indigent blind and confer with the State Commission for the Blind. The Chairman appointed Dr. E. P. Heller and Dr. H. B. Goodrich as members of this Committee.

Dr. Heller discussed the action of the American Medical Association of placing a member of the medical profession on the cabinet of the President of the United States with the supervisory and administrative powers over the health of the people. On motion the action of the American Medical Association was approved.

Dr. Heller presented the following resolution which was adopted by the Executive Council of the Jackson County Medical Society on January 18, 1938:

WHEREAS, The Board of Trustees of the American Medical Association has, in late December, 1937, taken an action which may well mark the turning point in the attitude of medical organization from a negative to a positive phase, from fact-finding to "initiating" and "developing," and

WHEREAS, The resolution of the Board of Trustees contains all of the elements needed to "apply on a nation-wide scale the best features of the numerous plans already in effect," thereby making it "possible for the organization to act specifically as a clearing house in the initiation, development and functioning of what may well evolve into a comprehensive system of medical care for all the people according to the American plan of medical practice" (from Editorial, J. A. M. A., January 15, 1938), and

WHEREAS, This identical aim was the purpose of the resolution unanimously passed by the Council of the Missouri State Medical Association on November 23, 1937, therefore be it

Resolved, By the Council of Jackson County Medical Society, meeting this 18th day of January, 1938, that the Board of Trustees of the A. M. A. be commended in the highest terms for its forward looking action of December, 1937, and be it further

Resolved:

1. That this Council urge the Officers, the Council and the House of Delegates of the Missouri State Medical Association to use all of their several agencies to promote wide knowledge and acceptance in the component units of the State Association of the proposals of the Board of Trustees of the A. M. A.

2. That this Council requests that endorsement of the action of the Board of Trustees of the A. M. A. be made a part of the order of business of the next meeting of the State Council and of the House of Delegates, and,

3. That this action of the Council of Jackson County Medical Society be communicated to the Board of Trustees of the A. M. A., to the Officers of the A. M. A., and of the Missouri State Medical Association, and published in the *Weekly Bulletin* of the Jackson County Medical Society.

(Signed) E. P. HELLER, Councilor, Seventh District  
Missouri State Medical Association.

The above resolution was adopted by the Executive Council of the Jackson County Medical Society on January 18, 1938.

On motion the action requested by the Jackson County Medical Society was approved.

Dr. R. B. Denny requested that Dr. Clyde P. Dyer be granted permission to present a resolution adopted by the joint Committee on Health Problems in Education of the National Education Association and the American Medical Association February 23, 1937.

Dr. Dyer presented the resolution as follows:

WHEREAS, The eyes and the sight of the school child are of the most vital importance for satisfactory school work, and their preservation for future health and efficiency depends upon their wise conservation during childhood; and

WHEREAS, The school has a grave responsibility for the conservation of eyesight among school children; and

WHEREAS, School administrators in many parts of the United States are frequently besieged by demands for admission into their school systems of eye examinations and eye-glass prescriptions by practitioners other than qualified doctors of medicine; and

WHEREAS, The eye, as an organ of vital necessity, requires careful conservation and deserves treatment only at the hands of trained and competent persons; and

WHEREAS, Teachers and nurses properly may and often do make rough tests of visual acuity in the class-room, but diagnosis of diseases of the eye and of disturbances of vision requires more extensive examination and often involves treatment other than the mere fitting of glasses; and

WHEREAS, Even the fitting of glasses often requires the paralysis of accommodation through the use of drugs popularly known as "drops," now therefore be it

Resolved, That it is the sense of the joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, in meeting assembled at New Orleans, February 23, 1937, that the safety of the eyes of school children, the adequate diagnosis of disease and the correct fitting of glasses require examination of children's eyes (beyond rough visual tests performed by teachers or nurses) by a licensed doctor of medicine and, upon his recommendation, by a medical specialist in diseases of the eye, properly known as an oculist or ophthalmologist.

On motion the Council approved the appointment of a Committee on Conservation of Eyesight and the President of the Association was instructed to include this recommendation in his message to the House of Delegates.

Dr. W. H. Breuer, Chairman of the Committee to Study the Medical Practice Act, reported that a basic science act was now being drafted by his Committee which would be presented to the House of Delegates for approval. Dr. Breuer also reported that his Committee had under consideration a bill requiring ante-nuptial examination sponsored by the Missouri Women's Chamber of Commerce, that certain objections to the bill as drawn had been filed with the Committee and that a conference with the sponsor would be arranged with a view of adjusting the differences of opinion. If the bill could be rewritten in time for presentation to the House of Delegates this would be done, otherwise the matter would be referred to the Committee on Public Policy.

Dr. Denny reported for the Committee on Membership on the status of membership as published in the report of the Secretary.

Dr. Carl F. Vohs, Chairman of the Committee on Medical Economics, presented the following resolution

adopted by the Board of Trustees of the American Medical Association December, 1937:

WHEREAS, A varying number of people may at times be insufficiently supplied with needed medical service for the maintenance of health and the prevention of disease; and

WHEREAS, The means of supplying medical service differ in various communities; be it

Resolved, That the American Medical Association stimulate the state and county medical societies to assume leadership, securing cooperation of state and local health agencies, hospital authorities, the dental, nursing and correlated professions, welfare agencies and community chests in determining for each county in the United States the prevailing need for medical and preventive medical service where such may be insufficient or unavailable; and that such state and county medical societies develop for each county the preferable procedure for supplying these several needs, utilizing to the fullest extent medical and health agencies now available, in accordance with the established policies of the American Medical Association. Be it further

Resolved, That the Board of Trustees of the American Medical Association establish a committee to cooperate with the Bureau of Medical Economics in outlining the necessary procedures for making further studies and reports of the prevailing need for medical and preventive medical service; and that the Secretary of the American Medical Association arrange to develop such activities through the secretaries of state and county medical societies in each instance, urging the formation of special committees in each county and state where committees are not available for this purpose.

Dr. Vohs discussed the outline of suggestions prepared by the American Medical Association for conducting the study for committees of each county medical society together with the various questionnaires to be filled out. The following recommendations were submitted by the Committee on Medical Economics for approval:

1. That each Councilor assume the directorship of the study in his respective district and encourage county medical societies to make the study. That one or more assistant directors be appointed by each Councilor to assist in the duties if the Councilor deems such appointments necessary. That if consistent in these appointments preference be given to members having had experience on committees of medical economics.

2. That prior to sending the forms to county medical societies and in order to provide the proper groundwork for an accurate study that there be held in each Councilor District one or more so-called "schools of instruction" attended by the Councilor, the assistant directors of the study and the chairmen of committees on medical economics or special committees as have been or may be appointed by the respective county medical societies.

At such conferences if deemed advisable by the Councilor, a member of the Committee on Survey of Medical and Hospital Facilities of the State Association (Drs. Ralph R. Wilson, Carl F. Vohs and Mr. E. H. Bartelsmeyer) will endeavor to be present to assist the Councilor. It might be advisable to also enlist the aid of the Association's Committee on Medical Economics which would add two more members to the State Committee, namely Dr. Morris B. Simpson, Kansas City, and Dr. E. L. Johnston, Concordia.

After a thorough understanding of the objective and scope of study as well as the procedure by the local county medical society, headquarters office will furnish a sufficient number of forms to the county society so that the study may get under way.

3. That the State Association's Committee on Survey of Medical and Hospital Facilities assume the responsibility of the accumulation of data assigned to the State Association. The Committee feels that with the services of Mr. Bartelsmeyer and headquarters staff and, possibly some additional stenographic service, the Committee will be able to carry out the purposes of this study in a creditable manner.

4. It will be noted the forms for the study to be filled out by the State Association have not as yet been received by headquarters office from the American Medical Association. Nor have the summary sheets for use by county medical societies been received. One addi-

tional form (number 9) for pharmacists to fill out has not as yet been received.

5. That each Councilor work out the procedure of the study in his respective District in cooperation with headquarters office.

6. That where a county has no organized county medical society that the study be conducted by a designated adjoining county with the assistance of the members of our Association residing and practicing in that respective county.

7. That there be no publicity given to the press.

The Committee invites the further suggestion of each Councilor.

The Committee held a meeting in St. Louis on March 28, with Dr. R. G. Leland, Director of the Bureau of Medical Economics of the American Medical Association.

On motion the recommendations were approved.

On motion the Council approved that an annual dinner be given by the Council in honor of the President, President-Elect and Past Presidents of the Association on the evening preceding the opening of the Annual Session of the Association and at the expense of the Association.

The following Councilors reported on the activity in their respective districts: Drs. H. B. Goodrich, Hannibal, Second District; Curtis H. Lohr, St. Louis, Third District; R. B. Denny, Creve Coeur, Fourth District; M. Pinson Neal, Columbia, Fifth District; A. J. Campbell, Sedalia, Sixth District; E. P. Heller, Kansas City, Seventh District; H. L. Kerr, Crane, Eighth District; W. H. Breuer, St. James, Ninth District, and A. H. Marshall, Charleston, Tenth District.

The Secretary was instructed to communicate with Dr. Bristow, Councilor of the First District, Dr. John R. Caulk, Treasurer, and Dr. E. J. Goodwin, Secretary-Editor, expressing regrets as to their absence and that their presence was missed at the session of the Council.

On motion the Council adjourned at 6 p. m.

The minutes of the Council meeting of May 2 (page 291) were read.

On motion duly seconded the report of the Council was adopted.

Dr. M. Pinson Neal, Columbia, read the report of the Reference Committee on Constitution and By-Laws:

#### REPORT OF THE REFERENCE COMMITTEE ON CONSTITUTION AND BY-LAWS

The following portion of the President's Message and Recommendations was approved by the Committee and recommended for adoption.

"I wish to call your attention to the report of the Committee on Constitution and By-Laws which makes no recommendations on the amendments to the Constitution proposed at our meeting a year ago. I am well aware that there is some difference of opinion throughout the state as to changes. I am also aware that there are some faults and defects in both our Constitution and in these suggested amendments. It seems to me that a thorough study should be made of our Constitution and of constitutions of other state associations and an attempt made to get the real opinion of all Missouri physicians. This could well be done by instructing our Council to conduct such a study, make it a special order of business at a July meeting in 1938 and report its findings and recommendations to the House of Delegates at the next Annual Meeting, for final adoption in 1940. By this procedure I believe we might secure a constitution which will be satisfactory to the entire membership and will safeguard the best interests of the Association as a whole."

On motion the report was adopted.

Dr. Ira H. Lockwood, Kansas City, read the report of the Reference Committee on Resolutions.



## REPORT OF THE REFERENCE COMMITTEE ON RESOLUTIONS

The following resolutions and recommendations were approved and upon motion were adopted: Basic Science Law (page 275), Public School Curricula (page 273), Mental Health (page 271), Antenuptial Examination Law (page 274), Integration of the Medical Profession (page 274), and Restriction of Use of Harmful Drugs (page 274).

Dr. R. M. James, Joplin, read the report of the Reference Committee on Miscellaneous Affairs.

## REPORT OF THE REFERENCE COMMITTEE ON MISCELLANEOUS AFFAIRS

Your Committee on Miscellaneous Affairs recommends the adoption of the reports of the Committees on Medical Economics, Medical Practice Act, Fractures and Medical-Legal Affairs and recommends the continuation of these committees and their activities.

On motion this report was adopted.

Dr. Percy Swahlen, St. Louis, read the report of the Reference Committee on Medical Education and Public Welfare.

## REPORT OF THE REFERENCE COMMITTEE ON MEDICAL EDUCATION AND PUBLIC WELFARE

The Committee recommends that the reports of the Committees on Postgraduate Course, Cancer, Maternal Welfare and Study of the Control of Syphilis be adopted.

On motion the report was adopted.

Dr. Curtis H. Lohr, St. Louis, moved that the Delegates to the San Francisco Session of the American Medical Association be reimbursed by the Association for transportation and living expense. Seconded and carried.

The following amendments to the Constitution and By-Laws were submitted by Dr. J. I. Simon, St. Louis:

Amend Article V by striking out "(1)" and the words "and (2) the officers of the Association enumerated in Section 1 of Article IX of this constitution" and adding one new section so that when amended said article shall read:

### ARTICLE V—HOUSE OF DELEGATES

SECTION 1. The House of Delegates shall be the legislative body of the Association and shall consist of delegates elected by the component county societies. The officers of the Association as enumerated in Section 1, Article IX, of this Constitution shall have the right to attend all meetings of the House of Delegates and all other rights of delegates in such meetings except the right to vote for anything except officers of the Association. The Past Presidents of the Association shall have all the rights of delegates except the right to vote.

SEC. 2. The officers of the House of Delegates shall be a Speaker and a Vice Speaker elected by the delegates from their body. The Secretary of the Missouri State Medical Association shall be the Secretary of the House of Delegates.

Amend Section 1, Article IX—Officers, by inserting after the word "Treasurer" the words "Speaker and Vice Speaker of the House of Delegates" so that when amended said Section shall read:

### ARTICLE IX—OFFICERS

SECTION 1. The officers of this Association shall be a President, a President-Elect, three Vice Presidents, a Secretary, a Treasurer, a Speaker and a Vice Speaker of the House of Delegates and ten Councilors.

Amend Article XIII of the Constitution by adding the words "and voting" following the word "present" in the third line, so that when amended said article will read:

Article XIII—The House of Delegates may amend any article of this Constitution by a two thirds vote of the Delegates present and voting at any Annual Session, provided that such amendment shall have been presented in open meeting at the previous Annual Session, and that it shall have been published twice during the year in THE JOURNAL of this Association, or sent officially to each component society at least two months before the meeting at which final action is to be taken.

### Amendments to the By-Laws

Amend Section 4, Chapter III, by striking out the word "President" and inserting the word "Speaker" and by inserting after the word "resolutions" the words "on majority vote of the House of Delegates" so that when amended said Section 4 shall read:

SEC. 4. From among members of the House of Delegates the Speaker shall appoint Reference Committees to which reports and resolutions on a majority vote of the House of Delegates shall be referred as follows:

Reference Committee on Amendments to the Constitution and By-Laws.

Reference Committee on Resolutions.

Reference Committee on Miscellaneous Affairs.

Reference Committee on Medical Education and Public Welfare.

He shall also appoint a Committee on Credentials and such other committees as may be considered by him to be necessary.

Amend Section 1, Chapter IV, by striking out the word "President" and inserting the words "Speaker of the House of Delegates" in the first line and the words "each candidate for Councilor must be a resident of the District for which he is nominated" and by striking out the last sentence, "On the adoption of this section the nomination of the President for the succeeding year shall be made from the floor of the House," so that when amended said section shall read:

### CHAPTER IV—ELECTION OF OFFICERS

SECTION 1. The Speaker of the House of Delegates on the first day of the Annual Session shall select a Committee on Nominations consisting of ten delegates, no two of whom shall be from the same Councilor District. The Committee on Nominations shall report the result of its deliberations to the House of Delegates in the form of a ticket containing the name of one member for each of the offices to be filled at that Annual Session excepting the President-Elect who shall be nominated from the floor of the House of Delegates.

Amend Section 1, Chapter V, by adding after the word "delegates" in the third line the words "until its Speaker is chosen" so that when amended Section 1, Chapter V, shall read:

### CHAPTER V—DUTIES OF OFFICERS

SECTION 1. The President shall preside at all meetings of the Association and of the House of Delegates until its Speaker is chosen and shall appoint all committees not otherwise provided for; he shall deliver an annual address at such time as may be arranged and shall perform such other duties as custom or parliamentary usage requires. He shall be the real head of the profession of the state during his term of office, and as far as practicable, shall visit, by appointment, the various sections of the state and assist the Councilors in building up the county societies and in making their work more practical and useful.

Amend Chapter XII of the By-Laws by adding the words "and voting" after the word "present" in the third line, so that when amended said chapter shall read:

### CHAPTER XII—AMENDMENTS

SECTION 1. These By-Laws may be amended at any Annual Session by a two thirds vote of the delegates

present and voting at that session, if the proposed amendment has been properly submitted to the House of Delegates and has lain on the table for one day.

Sec. 2. Upon the adoption of this Constitution and these By-Laws all previous constitutions and by-laws are thereby repealed.

These amendments were held over until 1939.

Dr. R. E. SCHLUETER, St. Louis: I have a letter from Dr. L. H. Hempelmann, St. Louis, which I should like to read and have referred to the proper committee:

Most physicians agree that the use of antipneumococcic serum is very beneficial in certain types of pneumonia. However, the cost is so great as to be almost prohibitive. Especially is this true of charity patients in private hospitals. The states of New York, Massachusetts, Pennsylvania and several others have arranged to type the sputa of pneumonia patients and supply sera in suitable cases free of charge. Some arrangement of this sort would be highly desirable for the State of Missouri.

The report was referred to the Reference Committee on Medical Education and Public Welfare.

Dr. Carl F. Vohs, St. Louis, offered the following amendment to the Constitution and By-Laws:

The following amendment to the By-Laws is proposed in order to make the special Committee on the Study of the Control of Syphilis a standing committee and to change the name of the standing Committee on Maternal Welfare to the Committee on Maternal Welfare and Infant Care.

Amend Chapter VII, Section 1, of the By-Laws to include a Committee on Control of Syphilis and to change the name of the Committee on Maternal Welfare to Committee on Maternal Welfare and Infant Care so that when amended the section shall read:

#### CHAPTER VII—COMMITTEES

SECTION 1. The standing committees of this Association shall be as follow:

A Committee on Scientific Work.

A Committee on Public Policy.

A Committee on Publication.

A Committee on Medical Defense.

A Committee on Medical Education and Hospitals.

A Committee on Medical Economics.

A Committee on Postgraduate Course.

A Committee on Cancer.

A Committee on Maternal Welfare and Infant Care.

A Committee on Mental Health.

A Committee on Constitution and By-Laws.

A Committee on Health and Public Instruction (The McAlester Foundation).

A Committee on Control of Syphilis.

Unless otherwise provided in these By-Laws, each of these committees shall consist of three members, each of whom shall serve for a term of three years. One member of each of these committees shall be appointed annually by the President, by and with the consent of the House of Delegates, provided that at the Seventieth Annual Session one member of each of the foregoing committees shall be appointed for a term of three years, one each for two years, and one each for one year. (Committee on Cancer created 1931.) (Committees on Maternal Welfare, Mental Health and Health and Public Instruction created in 1936.)

Amend Chapter VII of the By-Laws by adding a new section to be known as Section 14 as follows:

Sec. 14. The Committee on Control of Syphilis shall consist of five members. The duties of the Committee on Control of Syphilis shall be to review the available information on the syphilis problem, assemble additional information covering the nature and extent of the facilities which now exist for the diagnosis, treatment and public health control of syphilis, recommend such supplemental and new state or local facilities and measures as seem desirable in dealing with this infection and to cooperate fully with the State Board of Health, the State Commissioner of Health and the

United States Public Health Service in carrying out such syphilis control programs as have been or may in the future be established.

The amendments were referred to the Reference Committee on Constitution and By-Laws.

Dr. O. W. Koch, St. Louis, offered a resolution in regard to House Bill 4650, referring to osteopaths, and moved its adoption. The motion was seconded and carried.

Dr. H. A. Lowe, Springfield, offered the following recommendation:

That the President be requested to appoint a committee of three to be known as the Committee on Rural Medicine, the duties of which committee shall be to cooperate with the Committee on Scientific Work and arrange a program at each Annual Session designed toward problems most common in rural practice.

The resolution was adopted.

Dr. E. L. Spence, Kennett, offered the following amendment to Chapter VII of the By-Laws:

Unless otherwise provided in the By-Laws all committees shall consist of five members, two serving for one year, two for two years and one for three years.

This was referred to the Reference Committee on Constitution and By-Laws.

Invitations were extended the Association for the 1939 Session by Excelsior Springs and Springfield. Excelsior Springs was selected for the 1939 Session.

On motion the House of Delegates adjourned until Wednesday afternoon.

#### Wednesday, May 4, 1938—Afternoon Session

The House of Delegates convened in joint session with the General Assembly at 3:00 p. m., with the President, Dr. Dudley S. Conley, Columbia, in the Chair.

Dr. T. R. Meyer, Clayton, read a paper entitled "Medical Participation in Public Health Programs."

Dr. A. R. McComas, Surgeon, reported for the Committee on Credentials that there were accredited five officers, eight Councilors and 108 Delegates, a total of 119. Dr. H. L. Mantz, Kansas City, called for a roll call which showed eighty members actually present.

The minutes of the previous meeting were read and on motion approved.

#### Nomination for President-Elect

Dr. Ira H. Lockwood, Kansas City, nominated Dr. James R. McVay, Kansas City, for President-Elect. The nomination was seconded by Dr. R. E. Schlueter, St. Louis.

On motion, duly seconded and carried, the Secretary was instructed to cast the unanimous ballot of the House of Delegates for Dr. James R. McVay, Kansas City, as President-Elect. The Secretary cast the unanimous ballot of the House for Dr. James R. McVay, Kansas City, as President-Elect of the Missouri State Medical Association for the ensuing year and the President declared Dr. McVay so elected.

Dr. McVay was escorted to the platform by Drs. Ira H. Lockwood, Kansas City, and R. E. Schlueter, St. Louis.

DR. JAMES R. McVAY, Kansas City: Mr. President, Gentlemen of the House of Delegates of the Missouri State Medical Association: I will not take up your time telling you how appreciative I am of this honor you have bestowed upon me. It was in this room in 1921 that I read my first paper before this Association. I approached that ordeal with a certain amount of timidity, feeling my unfitness, and at this time I approach this office with that same timidity. But I will promise you that during the time that it shall be my privilege to act as your presiding officer I will at all times be open to suggestions which are for the betterment of the Missouri State Medical Association. It may be that there is not always concurrence of thought when we as delegates



attempt to achieve certain results, but I am sure there is always among the men who compose the House of Delegates a unanimity of purpose, and that is to make the Missouri State Medical Association the most scientific association in the United States and it is with that in mind that I most earnestly solicit your support at the time when I shall become your presiding officer. I thank you.

### Report of the Committee on Nominations

For Vice Presidents: Dr. F. G. Mays, Washington; Dr. D. C. McCraw, Bolivar, and Dr. Levi H. Fuson, St. Joseph.

For Delegates to the American Medical Association: For Delegate, Dr. W. H. Breuer, St. James; alternate, Dr. Frank R. Teachenor, Kansas City. Delegate, Dr. A. R. McComas, Sturgeon; alternate, Dr. H. L. Kerr, Crane.

For Councilors:

1st District....Dr. A. S. Bristow, Princeton  
3rd District....Dr. Curtis H. Lohr, St. Louis  
5th District....Dr. William A. Bloom, Fayette  
7th District....Dr. E. P. Heller, Kansas City  
9th District....Dr. A. H. Thornburgh, West Plains

On motion of Dr. Victor E. Sherman, St. Louis, the following nominations were placed: For Vice Presidents, Dr. F. E. Butler, Salem, and Dr. W. F. Francka, Hannibal. For Councilor of the Ninth District, Dr. E. C. Bohrer, West Plains. For Delegate to the American Medical Association, Dr. H. L. Kerr, Crane; alternate, Dr. Paul F. Cole, Springfield.

Dr. R. E. Schlueter, St. Louis, pointed out that Delegates were ineligible to any office except that of Councilor.

Dr. Frank G. Mays, Washington; Dr. F. E. Butler, Salem, and Dr. W. F. Francka, Hannibal, withdrew as candidates because they had qualified as delegates.

Dr. Carl F. Vohs, St. Louis, nominated Dr. C. A. W. Zimmermann, Cape Girardeau, as Vice President.

Dr. H. L. Mantz, Kansas City, nominated Dr. H. L. Kerr, Crane, as Delegate to the American Medical Association, and Dr. W. F. Francka, Hannibal, as alternate.

Dr. Paul F. Cole, Springfield, and Dr. H. L. Kerr, Crane, withdrew their names as candidates as alternate delegate, respectively, to the American Medical Association.

Dr. A. R. McComas, Sturgeon, and Dr. H. L. Kerr, Crane, were elected Delegates to the American Medical Association, and Dr. Frank R. Teachenor, Kansas City, and Dr. W. F. Francka, Hannibal, alternates.

The following Councilors were elected: First District, Dr. A. S. Bristow, Princeton; Third District, Dr. Curtis H. Lohr, St. Louis; Fifth District, Dr. William A. Bloom, Fayette; Seventh District, Dr. E. P. Heller, Kansas City; Ninth District, Dr. E. C. Bohrer, West Plains.

The President appointed Drs. A. R. McComas, Sturgeon, and J. F. Harrison, Mexico, to escort Dr. B. W. Hays, Jackson, the incoming President, to the platform for installation.

### Installation of Dr. Hays

PRESIDENT CONLEY: The warmth of your welcome here today shows the high esteem in which you are held by your fellow doctors. Everyone values you highly and whenever I think of you I think of what another doctor said in a former year, "None knew him but to love him; none loved him but to praise." It gives me great pleasure to present to this body my successor, Dr. B. W. Hays.

DR. B. W. HAYS, Jackson: I think at Cape Girardeau I expressed my very sincere appreciation of the great honor you have bestowed upon me. I feel that I do not deserve the honor, but some of my friends insisted I did and the result was that I became your President-

Elect. I realize that the duties of the President of this Association are arduous, the responsibilities great, and it will require a lot of energy. I feel that the election of a President-Elect with younger blood, a transfusion, as it were, is much in my favor. I was drifting heavily perhaps to the left, and you gentlemen in the study of the physiology of the blood know what a drift to the left means. In addition, we are going to Excelsior Springs, where the waters are invigorating and life giving and we hope to be rejuvenated there.

Dr. B. W. Hays, Jackson, made the following appointments on standing committees:

Ralph A. Kinsella, St. Louis, Committee on Scientific Work.

Rex. L. Diveley, Kansas City, Committee on Post-graduate Course.

M. H. Shelby, Cape Girardeau, Committee on Publication.

W. H. Breuer, St. James, Committee on Public Policy.

M. L. Klinefelter, St. Louis, Committee on Defense.

Ross A. Woolsey, St. Louis, Committee on Medical Education and Hospitals.

D. A. Robnett, Columbia, Committee on Cancer.

Carl F. Vohs, St. Louis, Committee on Medical Economics, Chairman.

E. F. Hoctor, Farmington, Committee on Mental Health.

Ralph R. Wilson, Kansas City, Chairman, and Buford G. Hamilton, Kansas City, Committee on Maternal Welfare.

A. R. McComas, Sturgeon, McAlester Foundation, Chairman.

Robert Vinyard, Springfield, Committee on Constitution and By-Laws.

C. T. Ryland, Lexington, Committee on Study of Control of Syphilis.

M. L. Klinefelter, St. Louis, Chairman; Frank D. Dickson, Kansas City; Wm. J. Stewart, Columbia; James D. Horton, Springfield, and H. K. Wallace, St. Joseph, Committee on Fractures.

A. J. Kotkis, St. Louis, Chairman, and C. A. W. Zimmermann, Cape Girardeau, Committee on Physical Therapy.

W. H. Breuer, St. James, Chairman; Lee D. Cady, St. Louis; J. Milton Singleton, Kansas City; T. W. Cotton, Van Buren; E. D. James, Joplin; O. C. Gebhart, Oregon, and M. Pinson Neal, Columbia, Committee on Medical Practice Act.

James R. McVay, Kansas City, Chairman, Committee on Medical-Legal Affairs.

Carl F. Vohs, St. Louis, Chairman; Ralph R. Wilson, Kansas City, and E. H. Bartelsmeyer, St. Louis, Committee on Medical and Hospital Facilities.

On motion of Dr. C. A. W. Zimmermann, Cape Girardeau, duly seconded, these appointments were confirmed.

Dr. M. Pinson Neal, Columbia, Chairman, reported for the Reference Committee on Amendments to the Constitution and By-Laws as follows:

### REPORT OF REFERENCE COMMITTEE ON AMENDMENTS TO THE CONSTITUTION AND BY-LAWS

Amendments were offered proposing making the special committee on the Study of the Control of Syphilis a standing committee and to change the name of the Committee on Maternal Welfare to Maternal Welfare and Infant Care. These amend Chapter VII, Section 1, of the By-Laws. Your Committee recommends the adoption of this amendment.

The Committee recommends that the Committee on Study of Control of Syphilis be termed Committee on Control of Venereal Disease.

The Committee studied the proposal of Dr. E. L. Spence, Kennett, which would add to the members of

standing committees a sufficient number to make them consist of five members. A study of the added expense to the Association may be summarized as follows: A committee meeting costs the Association on an average \$25 per member in attendance. With the committees as now constituted the cost to the Association, if the committees meet once a year is \$1175.00, on an average of twice a year the cost would be \$2350.00. If the proposed resolution is approved increasing these committees from three to five members, the cost to the Association will be \$3150.00 annually. The Committee considered also the expense of the present Council as against the old Council. The old Council had one meeting in the year which at \$25 a member would be \$775 a year. The present Council held four sessions last year and on the same basis of \$25 a member it costs the Association \$1500.00, almost double what the previous Council had cost. Your Committee therefore makes a majority, not a unanimous, recommendation that, owing to the necessary outlay of finances, the resolution be not adopted.

Because there were not two thirds of the delegates present to vote on the amendments this report was referred to the Council.

Dr. Ira H. Lockwood, Kansas City, Chairman, reported for the Reference Committee on Resolutions that two resolutions had been presented as follow:

#### **A Resolution on the Development of a Committee or Council on American Spas and Health Resorts by the American Medical Association**

WHEREAS, There are some purported spas in America that make exaggerated claims as to their curative properties and that are not conducted on an ethical basis, and

WHEREAS, There is almost a total absence of reliable information on American spas and health resorts, and

WHEREAS, Many American citizens go to European spas when equal or better results might be obtained at American spas with great saving of time, money and inconvenience, therefore be it

Resolved, That this House of Delegates instruct our Delegates to present a resolution to the House of Delegates of the American Medical Association at the San Francisco Session in June, 1938, authorizing the President of the American Medical Association to appoint a special committee of five to conduct a study of American spas and health resorts to the end that authentic information regarding spas may be available to physicians.

#### **Resolution on Cancer Commission, Cancer Committee, etc.**

In view of the extensive program of the Missouri State Cancer Commission and the invasions of the private practice of medicine and surgery that their program contemplates:

WHEREAS, In view of the inadequacy of the admission methods of the proposed Cancer Hospital and the direct information that such admissions will be upon the same basis as the other state eleemosynary institutions, and

WHEREAS, With knowledge that the state law creating this Cancer Commission and Hospital directly insists that this hospital shall be for indigent citizens only, and

WHEREAS, In view of the fact that this Cancer Commission is only responsible to itself and the Governor and without any direct supervision, and

WHEREAS, In view of the fact that the Cancer Committee and the Cancer Commission have identical chairmen, and

WHEREAS, Especially in view of the fact that through this development of a Cancer Commission and Hospital, that there is further extensions of state medicine and further centralization of medical practice within the state, and

WHEREAS, In view of the fact that the law creating this board and hospital does specifically compel this board to foster the development of cancer conferences and educational propaganda among the physicians and the laity, therefore be it

Resolved, By the membership of the Missouri State Medical Association as a committee of the whole:

That it is recommended to the Commission that they proceed to develop within the various centers of population that are already equipped with hospitalization and professional personnel, cancer conferences at regular intervals and provide per diem expenses for the indigents who may apply for treatment;

That these cancer conferences shall be organized in cooperation with the authorities of the councilor districts of the State Association or with county society units wherever the physical and professional background meets with standard requirements as recognized by national sponsoring bodies (American College of Surgeons, American Medical Association, etc.) and

that it shall be practical to supply certain professional assistance in order to perfect units in certain territory;

That it is strongly recommended that the Cancer Commission employ trained investigators to determine the indigency and reasonable admission of patients;

That every effort be used to maintain this ambition for cancer control so that there will not be any further invasion of the practice of medicine and surgery within the many communities within the state by the development of a general hospital as an outgrowth of the cancer hospital;

That the Cancer Commission should recognize that local facilities for the care of the people of such communities cannot be developed to an increasing usefulness unless these local units of hospitalization and profession are supported and that as little medical and surgical practice be diverted to state institutions or channelized into state medicine as possible;

That the prime and important factor in the early diagnosis and cure of cancer is the family physician and through this agency the major effort for cancer propaganda should be channelized;

That the Missouri State Medical Association appoint through the President a Committee upon Cancer Propaganda that shall advise and supplement that development of cancer conferences throughout the state.

These resolutions were referred to the Council.

Dr. Ira H. Lockwood, Kansas City, offered the following resolution:

Resolved, That a vote of appreciation be extended to the Governor of the State of Missouri for his address; to the local committee on arrangements and the Cole County Medical Society for their efforts expended in our behalf in making this one of the most successful Annual Meetings of the Missouri State Medical Association, and that the Secretary be instructed to extend to our hosts our deepest appreciation of their efforts in making our stay in their city happy, pleasant and profitable.

This resolution was adopted unanimously.

Dr. P. H. Swahlen, St. Louis, requested, for the Reference Committee on Medical Education and Public Welfare, that the matter of antipneumococcus serum be referred to the proper authority for action.

This matter was referred to the Council.

On motion the House of Delegates adjourned *sine die*.

### **MEETING OF THE COUNCIL**

Missouri Hotel

Monday, May 2, 1938—First Session

The first meeting of the Council convened at a luncheon meeting at noon, May 2, 1938, the Chairman, Dr. M. Pinson Neal, Columbia, presiding.

Roll call showed the following Councilors present:

1st District....A. S. Bristow, Princeton  
2nd District....H. B. Goodrich, Hannibal  
3rd District....Curtis H. Lohr, St. Louis  
5th District....M. Pinson Neal, Columbia  
6th District....A. J. Campbell, Sedalia  
7th District....E. P. Heller, Kansas City  
8th District....H. L. Kerr, Crane  
9th District....W. H. Breuer, St. James  
10th District....A. H. Marshall, Charleston

The minutes of the meeting of April 15, 1938, were approved.

On motion, duly seconded, the Council approved the President's recommendation of complete cooperation with the American Medical Association in its proposed study of the provision of medical care for all the people.

On motion the Council approved the President's recommendation of the appointment of a Committee for the Conservation of Eyesight and a Committee on Automobile Accidents.

The President's recommendation that the Council conduct a thorough study of our Constitution and By-Laws and report its findings and recommendations at the next Annual Session was approved.

The President's commendations of the work of the various committees and of the efficient cooperation of the State Board of Health with the Association were heartily approved.

On motion the report of the Secretary was approved.



On motion the report of the Committee on Defense was approved.

On motion the report of the Committee on Publication was approved.

On motion a vote of confidence was extended the Committee on Publication and the Committee was authorized to use its discretion in the matter of the acceptance or rejection of material presented for publication.

On motion the report of the Committee on Public Policy was adopted. The recommendation of the Committee on Public Policy that the Committee to Study the Medical Practice Act be continued for the purpose of assisting the Committee on Public Policy in legislative matters was approved.

Dr. M. Pinson Neal, Columbia, Chairman, appointed the Auditing Committee as follows: Drs. A. S. Bristow, Princeton; Curtis H. Lohr, St. Louis, and A. J. Campbell, Sedalia.

On motion the report of the Treasurer was referred to the Auditing Committee.

Drs. E. P. Heller, Kansas City, and H. B. Goodrich, Hannibal, constituting the Council committee to study the problems of the care of the indigent blind, appointed April 15, 1938, reported as follows:

#### Report of Special Committee to Investigate Grievances Against the Missouri Commission for the Blind

At the meeting of the Council in Kansas City, April 15, this committee was appointed by the Chairman of the Council to investigate the present general dissatisfaction of the ophthalmologists in Missouri concerning the activities of the Missouri Commission for the Blind. Three county medical societies of Missouri have passed motions recommending that the Association take steps to remedy the situation.

This committee has had a comprehensive report from Mrs. Mary E. Ryder, who is executive director of the Missouri Commission for the Blind, and has carefully studied the report of the Missouri Commission for the Blind for the biennium of 1935-1936 and the revised statutes of the State of Missouri of 1929 bearing on the Commission for the Blind. The committee has discussed this matter with many ophthalmologists from different parts of the state and finds the dissatisfaction general. Many are so dissatisfied that they have stopped cooperating with the commission.

It is recognized by the Missouri Commission for the Blind that due to the stress of a greatly expanding program for the prevention of blindness and sight conservation their staff of ophthalmologists has rendered unusual services to the indigent people of Missouri without remuneration. This precedent of gratuitous service was originated by the ophthalmologists themselves when the scope of the work was far less than at present.

During the biennium 1935-1936 over \$56,000 was expended by the commission for the prevention of blindness program which included thirty-four diagnostic clinics, hospitalization for 483 cases, and furnishing of glasses to 3380 indigent persons. The ophthalmologists who made these clinics possible examined 11,564 patients, refracted 4464 patients and performed 483 operations. They received no remuneration except 5 cents per mile for traveling expenses to and from these clinics.

Although the commission aims for these clinics to be for the indigent, yet the ophthalmologists conducting these clinics have found a considerable proportion of the patients apparently able to pay a private physician's fee. Even newspaper announcements of clinics inviting the public to come and have any eye difficulties examined have not always stated that the clinic is limited to those who are indigent.

The ophthalmologists are paid \$5 for each examination of an applicant for the blind pension which is considered satisfactory unless the patient cannot travel and has to be visited at home many miles from the ophthalmologist's office. In these cases he is paid 5 cents a mile by the blind commission for expenses but the loss of time on such a visit is unreasonable if the distance is great.

According to the attorney-general the appropriation given to the Missouri Commission for the Blind for the prevention of blindness program cannot be used for payment of fees to eye physicians for their services. This holds true with regard to their services on clinic days, for examination of prevention patients sent to their offices and for eye operations. However, the appropriation is used for hospitalization for indigent eye patients, eye medicine, glasses, transportation of eye patients and adequate payment of executives and field workers.

Therefore the committee recommends (1) that this matter be turned over to the Committee on Public Policy with the request that it draw up a suitable bill for consideration by the next legislature to provide an appropriation to the Missouri Commission for the Blind which will furnish a reasonable remuneration for the ophthalmologists' time and skill. The committee suggests that this reasonable remuneration be 50 per cent of the usual minimum fee for such services. (2) That the commission be appraised of the fact that many patients attending the clinics and getting the benefit of eye examinations and recommendations are able to pay the regular fees of private physicians and also that in many cases the investigation of case workers is excessively liberal in determining indigency.

That the Committee on Public Policy be requested to make a report to the Council at its annual meeting in November.

On motion, duly seconded, the report was adopted.

On motion the Council adjourned.

#### Wednesday, May 4, 1938—Second Meeting

The second meeting of the Council convened May 4 following the final meeting of the House of Delegates with Dr. Curtis H. Lohr, St. Louis, acting as temporary chairman.

Roll call showed the following Councilors present:

1st District. . . . A. S. Bristow, Princeton  
2nd District. . . . H. B. Goodrich, Hannibal  
3rd District. . . . Curtis H. Lohr, St. Louis  
4th District. . . . R. B. Denny, Creve Coeur  
5th District. . . . William A. Bloom, Fayette  
7th District. . . . E. P. Heller, Kansas City  
8th District. . . . H. L. Kerr, Crane  
9th District. . . . E. C. Bohrer, West Plains

Also present were Dr. B. W. Hays, Jackson, President; Dr. James R. McVay, Kansas City, President-Elect; Dr. E. J. Goodwin, St. Louis, Secretary-Editor, and Mr. E. H. Bartelsmeyer, St. Louis, Assistant Secretary.

Dr. Curtis H. Lohr, St. Louis, was elected Chairman of the Council.

The election of officers for the year resulted as follows: Secretary-Editor, Dr. E. J. Goodwin, St. Louis; Assistant Secretary and Business Manager, Mr. E. H. Bartelsmeyer, St. Louis; Treasurer, Dr. Ralph L. Thompson, St. Louis.

On motion of Dr. R. B. Denny, Creve Coeur, action on the reports referred to the Council was deferred until the next meeting of the Council.

The Auditing Committee reported that they found the books of the Association correct.

Dr. A. S. Bristow, Princeton, reported that an attempt was being made in the First Councilor District to hypenate counties into larger societies.

Dr. H. B. Goodrich, Hannibal, moved that the Putnam

County Medical Society be hyphenated with the Adair-Schuyler-Knox-Sullivan County Medical Society. The motion was seconded and carried.

Dr. Goodrich reported that an attempt was being made to hyphenate Lewis and Clark county medical societies, the Macon and Randolph-Monroe county medical societies and the Shelby with the Marion-Ralls-County Medical Society.

Dr. R. B. Denny, Creve Coeur, read a communication from Dr. A. H. Marshall, Charleston, tendering his resignation as Councilor of the Tenth District. On motion, seconded by Dr. E. P. Heller, Kansas City, the resignation for accepted.

President Hays nominated Dr. E. J. Nienstedt, Sikeston, for Councilor of the Tenth District.

On motion by Dr. R. B. Denny, Creve Coeur, seconded by Dr. William A. Bloom, Fayette, the appointment by the President of Dr. E. J. Nienstedt, Sikeston, to fill the vacancy was approved.

On motion of Dr. H. B. Goodrich, Hannibal, seconded by Dr. E. P. Heller, Kansas City, it was voted to send Mr. E. H. Bartelsmeyer, St. Louis, to the San Francisco Session of the American Medical Association.

On motion of Dr. H. B. Goodrich, Hannibal, the Secretary was instructed to send a letter of appreciation to Dr. John R. Caulk, St. Louis, for his services as Treasurer and expressing the sympathy and best wishes of the Council.

On motion the Council adjourned *sine die*.

#### COMMITTEE ON MATERNAL WELFARE DINNER MEETING

Monday, May 2, 1938—Missouri Hotel

The Committee on Maternal Welfare held a dinner meeting at the Missouri Hotel, May 2, the Chairman of the Committee, Dr. Ralph R. Wilson, Kansas City, presiding.

Dr. Palmer Findley, Omaha, Nebraska, was a guest of the Committee and discussed maternal deaths reported at the meeting.

Taking part in reports and discussions were Drs. Palmer Findley, Omaha, Nebraska; Ralph R. Wilson, Buford G. Hamilton and George F. Pendleton, Kansas City; Otto H. Schwarz, T. K. Brown, E. Lee Dorsett, Fred Emmert and Paul F. Fletcher, St. Louis; Harry F. Parker and James W. Chapman, Jefferson City; William J. Shaw, Fayette; E. C. Bohrer, West Plains, and W. H. Breuer, St. James.

Dr. Richard B. Schutz, Kansas City, received the award for the best article on obstetrics appearing in THE JOURNAL during the year for his article on "Bleeding in Pregnancy" which appeared in the September issue of THE JOURNAL.

#### MINUTES OF THE GENERAL MEETING

House Chamber, Capitol Building

Monday, May 2, 1938—Afternoon Session

The scientific sessions were held in the House Chamber, Capitol Building, Jefferson City, the first convening at 1:15 p. m., with Dr. William A. Bloom, Fayette, Vice President, in the chair. Addresses were presented as follows:

Dr. Harold G. Newman, St. Louis, "Undulant Fever."

Dr. George M. Curtis, Columbus, Ohio, Research Professor of Surgery, Ohio State University College of Medicine, "The Iodine Metabolism in Thyroid Disease."

Dr. J. H. J. Upham, Columbus, Ohio, President of the American Medical Association and Dean of the Ohio State University College of Medicine, "The Clinical Significance of Gastric Motility in the Human Subject."

Dr. B. Y. Glassberg, St. Louis, "The Effect of Therapy Upon the Insulin Requirement in Diabetes."

Tuesday, May 3, 1938—Morning Session

Dr. Dudley S. Conley, Columbia, Address of the President, "History of the State Medical Association."

Dr. B. W. Hays, Jackson, Address of the President-Elect, "Some Medical Side Lights."

Dr. Anthony B. Day, St. Louis, "Myasthenia Gravis: Recent Development in Treatment, With Report of a Case."

Dr. William J. Shaw, Fayette, "Country Obstetrics: A Review of 600 Cases." Discussed by Dr. Buford G. Hamilton, Kansas City.

Dr. Palmer Findley, Omaha, Nebraska, "Puerperal Infection."

Dr. E. Lee Dorsett, St. Louis, "The Third Stage of Labor: With Special Reference to Postpartum Hemorrhage, Placenta Accreta and Inversion of the Uterus." Discussed by Drs. Otto H. Schwarz and Hudson Talbott, St. Louis.

Dr. Andrew C. Henske, St. Louis, "Tuberculosis Complicating Pregnancy: Treatment and Report of Cases." Discussed by Drs. Louis C. Boisliniere and Otto H. Schwarz, St. Louis.

Governor Lloyd C. Stark, Jefferson City, "Address of Welcome."

Tuesday, May 3, 1938—Afternoon Session

Dr. John B. Devine, St. Louis, "Bilateral Pneumothorax in the Treatment of Pulmonary Tuberculosis."

Dr. Duncan C. McKeever, Kansas City, "Fractures of the Os Calcis."

Dr. Frederick A. Jostes, St. Louis, "Fractures of Both Bones of the Leg."

Dr. J. H. Hershey, St. Louis, "Indications for Surgery of the Stomach."

Dr. August A. Werner, St. Louis, "Obesity and Its Treatment."

Dr. M. Pinson Neal, Columbia, "The Causes and Complications of Pneumonia." Discussed by Drs. James Hill, Jefferson City, and H. L. Motley, Columbia.

Dr. J. G. Probststein, St. Louis, "Perforated Peptic Ulcer."

Dr. Daniel L. Sexton, St. Louis, "Intermenstrual Pain."

Dr. Claude J. Hunt, Kansas City, "Radical Surgical Resection for High Lying Malignant Lesions of the Stomach." Discussed by Drs. J. W. Thompson, St. Louis, and D. A. Robnett, Columbia.

Wednesday, May 4, 1938—Morning Session

Dr. C. Souter Smith, Springfield, "Some Recent Advances in Ophthalmology." Discussed by Drs. Harvey J. Howard, St. Louis, and John McLeod, Kansas City.

Dr. John McLeod, Kansas City, "The Eye in Congenital Syphilis."

Dr. Robert E. Britt, St. Louis, "The Neurotic Factor in Disease."

Dr. Thomas B. Hall, Kansas City, "Early Eruptive Syphilis."

Drs. Paul F. Stookey and Louis Scarpellino, Kansas City, "Prophylactic Treatment of Staphylococcus Cellulitis of the Face."

Dr. Dan G. Stine, Columbia, "The Effect of Work Upon the Heart."

Drs. Harry M. Gilkey and Walter E. Owen, Kansas City, "Ependymoma: Case Study."

Dr. O. B. Withers, Kansas City, "Allergy Due to Molds."

Dr. Paul F. Cole, Springfield, "The Missouri State Cancer Hospital and Its Relation to Medical Practice." Discussed by Drs. E. E. Mansur, Jefferson City; F. G. Thompson, St. Joseph, and E. H. Skinner, Kansas City.

Wednesday, May 4, 1938—Afternoon Session

Dr. E. T. Gibson, Kansas City, "Head Injuries and Their Mental Sequelae."



Dr. Radford F. Pittam, Kansas City, "Bilateral Carotid Denervation in Epilepsy and Hypertensive States." Discussed by Dr. Robert E. Britt, St. Louis.

Drs. A. Lloyd Stockwell and Clinton K. Smith, Kansas City, "Factors Determining the Management of Patients With Prostatic Hypertrophy." Discussed by Drs. Andy Hall, St. Louis, and Clinton K. Smith, Kansas City.

Dr. Otto J. Wilhelmi, St. Louis, "Diseases of the Testicle."

Dr. T. R. Meyer, Clayton, "Medical Participation in Public Health Programs."

On motion the Eighty-First Annual Session of the Missouri State Medical Association adjourned *sine die*.

## REGISTRATION AT EIGHTY-FIRST ANNUAL SESSION

- Abney, William L., Blackwater  
 \*Adair, Norman C., Columbia  
 Adams, C. Frederick, Jefferson City  
 Aldridge, M. R., Jefferson City  
 Allee, James W., Eldon  
 Allen, Charles H., Independence  
 \*Allen, Mrs. Thos. E., Jefferson City  
 Andersen, Elmer J. T., Montgomery City  
 \*Anderson, R. F., Kansas City  
 \*Antonowsky, B. S., New York  
 Appleberry, Charles H., Flat River  
 Appleberry, Reuben, Farmington  
 Asher, A. Graham, Kansas City  
 Ashley, Hugh V., Cape Girardeau  
 \*Ashley, J. D., Jr., Columbia  
 Atkins, James A., Lamar  
 Aufranc, Will H., Kennett  
 Baehr, John H. W., Washington  
 Bagby, James W., St. Louis  
 Bailey, Fred W., St. Louis  
 Baird, J. Edward, Excelsior Springs  
 Baker, James M., Columbia  
 \*Banner, R. E., Columbia  
 Barger, James N., Albany  
 Barnes, Asa, Higginsville  
 \*Barnes, Frank L., Jefferson City  
 \*Barnes, S. S., Kennett  
 Barnett, Floyd A., Fulton  
 Barron, W. Harry, Fredericktown  
 Bartelsmeyer, E. H., St. Louis  
 \*Bartlett, Dalton, Jefferson City  
 Bartlett, Willard, Jr., St. Louis  
 Baskett, Edgar D., Columbia  
 \*Baskett, Sarah, Jefferson City  
 Bassett, Sam T., Pacific  
 \*Bauer, W. W., Chicago  
 \*Bauman, C. S., St. Louis  
 Baumgarten, Walter, St. Louis  
 Becke, William G., St. Louis  
 Beckemeyer, W. A., Sedalia  
 Bedford, Stephen V., Jefferson City  
 Beers, Ellsworth G., Seymour  
 Belden, Edgar A., Marshall  
 Bernstein, Robert, Ava  
 \*Beyreuther, P. F., St. Louis  
 Bills, Marvin L., Kansas City  
 Bishop, William T., Sedalia  
 \*Blake, Betty, Jefferson City  
 \*Blakenship, F., Nevada  
 \*Blauw, Charles G., Columbia  
 \*Bledsoe, Judge C. C., Jefferson City  
 \*Visitor  
 Bloom, William A., Fayette  
 Bloomer, Gaylord T., St. Joseph  
 Bohling, Cord, Sedalia  
 Bohrer, E. Claude, West Plains  
 Boisliniere, Louis C., St. Louis  
 \*Boyer, A. L., St. Louis  
 Bradford, Oscar F., Columbia  
 Braecklein, William A., Higginsville  
 \*Brainerd, Mona, Jefferson City  
 Brashear, Howard C., Mexico  
 \*Brawley, Mrs. James, Jefferson City  
 \*Breckenkamp, A. W., St. Louis  
 Breckenridge, E. O., Maplewood  
 Brenner, Paul A., St. Louis  
 Breuer, R. E., Newburg  
 Breuer, W. H., St. James  
 Briegleb, Charles F., St. Clair  
 Bristow, A. S., Princeton  
 Britt, Robert E., St. Louis  
 \*Broadus, J. R., Columbia  
 \*Brown, C. A., Jefferson City  
 Brown, Eugene R., University City  
 \*Brown, Mrs. H. W., Jefferson City  
 Brown, J. E., Perry  
 Brown, Thomas K., St. Louis  
 Brown, William B., Columbia  
 Broyles, Watkins A., Bethany  
 Bruce, James G., Jefferson City  
 \*Bruce, Maxine, Jefferson City  
 Bruner, Claude R., Columbia  
 Buck, Ulysses G., Rothville  
 Buckingham, William, Kansas City  
 \*Buckner, Bob, Columbia  
 Burford, Cyrus E., St. Louis  
 Burke, J. P., Jr., California  
 \*Burner, Joseph, Jefferson City  
 \*Burnham, Mary, Fulton  
 Busiek, Urban J., Springfield  
 Butler, Fred E., Salem  
 Byland, Benj. F., Burlington Junction  
 Cady, Lee D., St. Louis  
 Campbell, A. J., Sedalia  
 \*Canada, Irma, Jefferson City  
 \*Capes, Bernard, Columbia  
 \*Carcoran, Dorothy, Jefferson City  
 \*Carle, Horace W., Columbia  
 Carlisle, John B., Sedalia  
 Carmichael, F. A., Fulton  
 \*Carmichael, F. A., Jr., Rochester, Minn.  
 \*Carrier, John A., Columbia  
 \*Castaldi, Anthony, Jefferson City  
 \*Castle, James, Chicago  
 Castles, John E., Kansas City  
 \*Chalkey, J., Columbia  
 \*Chamberlain, T. W., Jefferson City  
 \*Chapline, Elizaeth, Jefferson City  
 Chapman, James W., Jefferson City  
 Cheatham, R. F., Diamond  
 \*Cherry, Mildred, Jefferson City  
 Chilton, James C., Hannibal  
 \*Clark, Georgia, Jefferson City  
 \*Clark, James L., Jefferson City  
 \*Cleary, Leo, St. Joseph  
 \*Coen, E. B., Philadelphia  
 Coffey, Ralph R., Kansas City  
 \*Coil, Kathryn, Jefferson City  
 \*Cole, Mary, Jefferson City  
 Cole, Paul F., Springfield  
 \*Coleman, Helen, Jefferson City  
 \*Comstock, Irma, Jefferson City  
 Conley, Dudley S., Columbia  
 \*Connor, Dora, Jefferson City  
 Cook, Arnold A., St. Louis  
 Coombs, Miller O., Joplin  
 Cooper, Maurice E., Columbia  
 Cooper, R. Lee, Warrensburg  
 \*Cope, J. C., Columbia  
 Cotton, T. W., Van Buren  
 Coughlin, William T., St. Louis  
 Cowan, R. D., Aurora  
 \*Craig, Helen, Jefferson City  
 \*Craighead, Hazel, Jefferson City  
 Creech, Joseph C., Troy  
 Crews, Robert N., Fulton  
 Crider, Adolphus J., Dixon  
 Crouch, Richard L., Columbia  
 \*Curtis, George M., Columbus, Ohio  
 \*Dalton, Arthur R., Columbia  
 Davis, Charles B., Walker  
 Davis, E. Val, Kirksville  
 Dawson, John W., Eldorado Springs  
 Day, Anthony B., St. Louis  
 \*Dennis, E. L., Columbia  
 \*Denny, Helen, Jefferson City  
 Denny, Robert B., Creve Coeur  
 \*DeVilbiss, E. F., Kansas City  
 Devine, John B., St. Louis  
 Dexheimer, Frank E., Columbia  
 Dickerson, Walter M., Armstrong  
 Dieckroeger, Manuel L., Marceline  
 \*Dills, J. N., Columbia  
 Dixon, John R., Linneus  
 Dorris, George T., Ilmo  
 Dorris, Richard P., Jefferson City  
 Dorsett, E. Lee, St. Louis  
 \*Dorsey, W. H., Jefferson City  
 Drake, Avery A., Rolla  
 Dreyer, Philip, Huntsville  
 \*Dubrouillet, Mrs. F. J., Jefferson City  
 \*Dubrouillet, F. J., Jefferson City  
 \*Dulle, Mildred, Jefferson City  
 Dumbauld, Bunn A., Webb City  
 Duncan, Ralph E., Kansas City  
 \*Dunham, Helena, Jefferson City  
 Durst, Henry, Fulton  
 \*Dye, W. S., Columbia  
 Dyer, Clyde P., St. Louis  
 Dyer, J. H., Warrenton  
 Dysart, William P., Columbia  
 \*Edwards, David R., Columbia  
 \*Edwards, J. L., Jefferson City  
 \*Eggleston, Sallie, Jefferson City  
 Elam, William T., St. Joseph  
 Eldridge, Charles J., Kansas City  
 Elliott, B. Landis, Kansas City  
 \*Elliott, C. R., Columbia  
 \*Ellis, Cornelia, Columbia  
 \*Ellis, M. M., Columbia  
 \*Ellis, Mrs. M. M., Columbia  
 Emmert, Fred, St. Louis  
 \*Encoe, Mrs. W. H., Jefferson City  
 \*English, Milton, Columbia  
 Engman, Martin F., St. Louis  
 Enloe, Cortez F., Jefferson City  
 \*Enloe, Cortez, Jr., St. Louis  
 Enloe, Lawrence D., Jefferson City  
 \*Enyart, Ann, Jefferson City  
 \*Epstein, Herbert J., Columbia  
 Ernst, Edwin C., St. Louis  
 \*Eslick, Ralph L., Columbia  
 \*Estes, A. C., Columbia  
 Evans, J. Lane, Brookfield  
 \*Evans, Seth, Meadville  
 \*Farthing, Gene W., Columbia  
 Farthing, Robert R., Ozark  
 \*Ferguson, W. J., Columbia  
 Ferrell, William R., Belle  
 \*Findley, Palmer, Omaha, Nebr.  
 \*Finkel, B. W., Columbia  
 Finley, Freeman L., St. Louis  
 Fischel, Ellis, St. Louis  
 Fletcher, Paul F., St. Louis  
 Flynt, Joseph F., Paris  
 \*Forbis, Robert E., Columbia  
 Forgrave, L. P., St. Joseph  
 \*Francisco, C. B., Kansas City  
 Francka, W. F., Hannibal  
 Frazer, Thomas R., Nevada  
 Frick, John P., Kansas City  
 \*Gallaher, John A., Columbia  
 Gard, Raymond F., Kansas City  
 Gardner, Joseph W., Glasgow  
 Gashwiler, J. S., Novinger  
 Gay, Lee Pettit, St. Louis  
 Gentry, Merriitt L., Higginsville  
 \*Gerling, Victoria, Jefferson City  
 Gibson, Edward T., Kansas City  
 Gifford, Allen W., Springfield  
 \*Gilbert, W. R., St. Louis  
 Gilkey, Harry M., Kansas City  
 Gillham, Frank W., Jefferson City  
 Gillmor, Charles S., Kansas City  
 Glassberg, B. Y., St. Louis  
 Glaze, Kenneth F., St. Louis  
 Glover, Clark S., Russellville  
 \*Good, W. O., Columbia  
 Goodrich, H. B., Hannibal  
 Goodson, W. H., Liberty  
 Goodwin, E. J., St. Louis  
 \*Goran, D. F., Columbia  
 \*Goretsky, Max, Jefferson City  
 Gorham, Frank D., St. Louis  
 Gove, Herman S., Linn  
 \*Gow, Lucille, Jefferson City  
 Grabske, Charles F., Independence  
 \*Grace, C. M., Columbia  
 Gradwohl, R. B. H., St. Louis  
 Green, John R., Independence  
 Greene, C. W., Columbia  
 Greene, Luther D., Richmond  
 Greene, W. Wallace, Kansas City  
 Greenwood, Victor H., Buffalo  
 \*Greutter, John E., St. Louis

\*Grier, Miss, Jefferson City  
Grim, George E., Kirksville  
Grindon, Joseph, St. Louis  
Grindon, Joseph, Jr., St. Louis  
Grogan, Frank M., St. Louis  
Gronoway, Terrence P., Macon  
Gunn, William G., Versailles  
\*Guyot, J. DeVoine, Jefferson City  
Hall, Andy, Jr., St. Louis  
\*Hall, Henry, Jefferson City  
Hall, Oscar B., Warrensburg  
Hall, Thomas B., Kansas City  
Halsey, Thomas J., Butler  
Hamilton, Buford G., Kansas City  
\*Hamilton, M. C., St. Louis  
\*Hammit, Anna, Jefferson City  
\*Hannabam, Florence, Jefferson City  
Hansen, Arthur L., Appleton City  
Hanser, Theodore H., St. Louis  
Hardesty, Joel W., Hannibal  
Hardy, John W., Sumner  
Hardy, Joseph A., Jr., St. Louis  
Harlan, Delly Lee, Clarence  
Harris, Harold S., Troy  
Harrison, J. Frank, Mexico  
\*Harsh, Ralph T., Columbia  
Hart, P. V., Coatesville  
Hays, B. W., Jackson  
Hayward, John D., St. Louis  
Heller, E. P., Kansas City  
Helloweg, Charles E., Mt. Vernon  
\*Helsby, F. K., Kansas City  
\*Helton, Elpha, Jefferson City  
Helwig, Ferdinand C., Kansas City  
Henderson, James P., Kansas City  
\*Henley, Wilbur, Jefferson City  
Henske, Andrew C., St. Louis  
Henson, Lafayette L., Bunker  
\*Herron, D'Arlene, Jefferson City  
Hershey, John H., St. Louis  
Hess, H. Louis, Kansas City  
Higgins, Clinton K., St. Louis  
\*Hill, Bonnie, Jefferson City  
Hill, James A., Jefferson City  
Hill, Roland, St. Louis  
Hines, Paul, Webster Groves  
\*Hoening, G. L., St. Louis  
\*Hoershen, Henry, Jefferson City  
\*Hogan, Billie, Jefferson City  
\*Holt, W. P., Jefferson City  
Hopkins, Thomas A., Fulton  
Hornback, George A., Hannibal  
Horne, Albert H., Steelville  
Horton, James D., Springfield  
Howard, Harvey J., St. Louis  
Howard, Stanley P., Jefferson City  
\*Howe, Louis F., Union  
\*Hudson, G. R., Columbia  
\*Hume, H. C., Linn  
\*Humphries, Cora, Jefferson City  
Hunt, Claude J., Kansas City  
Hunt, Paul F., Kansas City  
\*Hunt, Viva, Jefferson City  
\*Huston, Auston E., Jefferson City  
Hutton, Joseph L., St. Louis  
Hyndman, C. E., St. Louis

\*Imes, Elvin D., Columbia  
\*Isle, Anna C., Kansas City  
\*Iungerich, Frank L., St. Louis  
James, Edward D., Joplin  
James, Joseph D., Springfield  
James, Luther S., Blackburn  
James, Robert M., Joplin  
Jennett, James H., Kansas City  
Jennings, Perry W., Canton  
\*Johnson, Charles H., Columbia  
\*Johnson, Mary B., Columbia  
Johnson, William E., Warrensburg  
Johnston, A. D., Corder  
Johnston, Elza L., Concordia  
Jolley, J. Frank, Mexico  
Jones, Austin B., Kansas City  
Jones, Omer H., Vienna  
Joseph, George E., Salem  
Jostes, Frederick A., St. Louis  
Katz, Samuel D., St. Louis  
\*Kelly, Mrs. Thomas, Jefferson City  
Kelly, Thomas J., Jefferson City  
Kerr, Frank T., Monett  
Kerr, Homer L., Crane  
Kerr, Russell, Kansas City  
Kibbe, Edgar A., California  
Kibbe, John H., Monroe City  
Kieffer, Roland S., St. Louis  
\*Killion, Nellie L., Jefferson City  
\*King, Eileen, Jefferson City  
\*Keinschmidt, Mrs. L. S., Columbia  
\*Kleinschmidt, L. S., Columbia  
Knight, John S., Kansas City  
Koch, Otto W., Overland  
Koon, Bernard T., Perryville  
Koppenbrink, Walter E., Higginsville  
Koritschoner, Robert, Kansas City  
Kotkis, A. J., St. Louis  
Krause, G. Lynn, St. Louis  
Krause, Irl B., Jefferson City  
\*Kroll, John, Jefferson City  
\*Kupersmith, W. R., St. Louis  
Kyner, Thomas A., Kansas City  
\*Laffoon, Frank, Jefferson City  
Lane, Clinton W., St. Louis  
Langsdorf, H. S., St. Louis  
Lanning, Richard C., Ste. Genevieve  
Lapp, Titus S., Fulton  
\*Lasley, Nell T., Jefferson City  
\*Lawton, A. W., New York  
\*Layher, Laura, Jefferson City  
Leach, Hordon T., Elston  
Leech, Charles A., Columbia  
LeMone, David V., Columbia  
Leslie, Charles H., Kirkwood  
Leslie, J. T., Jefferson City  
Leslie, Walter L., Russellville  
\*Lewis, Mrs., Jefferson City  
\*Lewis, Gene, Columbia  
Link, Joseph J., St. Louis  
Lissack, Edmund, Concordia  
\*Lockridge, Lee, Jefferson City  
Lockwood, Ira H., Kansas City  
Logan, Robert W., Jefferson City  
Lohr, Curtis H., St. Louis  
\*Long, D. M., Jefferson City  
Long, Frank B., Sedalia  
\*Long, Kenneth V., St. Louis  
Love, Joseph W., Springfield  
\*Lovell, Connie, Jefferson City  
Lowe, Horace A., Springfield  
Luedde, Philip S., St. Louis  
Luedde, William H., St. Louis

Luman, Frank E., Edina  
Lund, Herluf G., St. Louis  
Luton, L. S., St. Louis  
\*Lynn, Emily, Jefferson City  
\*Lyons, Jack, Columbia  
Lyons, L. M., Pierce City  
McCall, William K., Ladonia  
McComas, Arthur R., Sturgeon  
McComb, James A., Lebanon  
\*McConnell, Kenneth, Kansas City  
McCormick, F. L., Moberly  
\*McCoy, Pauline, Jefferson City  
McCraw, Doyle C., Bolivar  
\*McCullough, Jerome J., Columbia  
McFarland, A. Sidney, Rolla  
McGuire, Morris S., Boonville  
McHaney, John W., Jefferson City  
McIntyre, W. Kress, St. Louis  
McKeever, Duncan C., Kansas City  
McKnelly, Wm. V., Chamois  
McLeod, John, Kansas City  
McMahon, Alphonse, St. Louis  
\*McMillon, Mildred, Jefferson City  
McMurry, Marvin C., Paris  
McNay, Albert L., Pacific  
McVay, James R., Kansas City  
Macdonnell, C. R., Marshfield  
Maddux, William P., Mt. Vernon  
Major, Hermon S., Kansas City  
Mallette, Cyrus, Crocker  
Maneval, Karl E., Mexico  
Mansur, Edward E., Jefferson City  
Mantz, Herbert L., Kansas City  
Maples, F. H., Marshall  
Marshall, A. H., Charles'oon  
\*Martin, Mary, Jefferson City  
\*Martin, W. J., Columbia  
\*Martz, Del, St. Louis  
\*Martz, Jack, Columbia  
\*Martz, Robert, Columbia  
\*Matteson, Joseph J., Columbia  
Mays, Frank G., Washington  
Meinershagen, C. W., Salem  
\*Meisenbach, Mary, Jefferson City  
\*Meister, Cletus, Jefferson City  
\*Meller, Mrs. Clara, Jefferson City  
Menefee, B., Montgomery City  
Meredith, Arnold L., Prairie Home  
\*Mertens, Viola, New York  
Meyer, Theodore R., Clayton  
\*Meyers, T. C., St. Louis  
Miller, E. Lee, Kansas City  
\*Miller, H. I., Jefferson City  
\*Miller, Robert M., Belton  
\*Miltnerberger, P. C., Columbia  
\*Mitchell, Earl F., Excelsior Springs  
\*Mitchell, Genevieve, Jefferson City  
Mitchell, Sam E., Malden  
Monroe, Alfred E., Sedalia  
\*Moon, M. P., Columbia  
Moore, E. M., Higginsville  
\*Moore, Ila Z., Jefferson City  
Moore, Josiah G., Mexico  
Moore, Neil S., St. Louis  
\*Moore, R. A., Columbia  
\*Moore, Rowena, Jefferson City  
Morest, F. Stanley, Kansas City  
Morley, Frank R., Sedalia  
Morrison, Marriott T., St. Louis  
\*Moser, Mari Jane, Jefferson City

\*Mosley, Goldie H., Jefferson City  
\*Motley, H. L., Columbia  
\*Motley, Mrs. Lucy, Jefferson City  
Mullinax, Orr, St. Louis  
\*Murphy, A. B., St. Louis  
Musick, James D., Springfield  
\*Musselman, E., Jefferson City  
Neal, J. Park, Kansas City  
Neal, M. Pinson, Columbia  
Neff, Robert Lee, Joplin  
\*Neilson, C. A., Columbia  
Neilson, C. H., St. Louis  
Nemours, Paul R., St. Louis  
\*Neudorff, Louis G., Columbia  
Nevins, Roscoe C., Humansville  
Newman, Harold G., St. Louis  
Nichols, Chas. B., Auxvasse  
Nichols, Frank J., Centertown  
Nienstedt, E. J., Sikeston  
Nifong, Frank G., Columbia  
\*Noah, J. W., Columbia  
\*Noblitt, E. M., Columbia  
Norton, William H., St. Louis  
Nunn, Pat Morris, Kansas City  
O'Brien, Harry F., Mexico  
Ockerblad, Nelse F., Kansas City  
O'Connell, John, Overland  
O'Donoghue, James, St. Joseph  
\*Oliver, Mrs. B., Jefferson City  
\*Oliver, B. F., Jefferson City  
Oliver, Evert A., Richland  
\*O'Neill, Walter, Jefferson City  
\*Osborne, C. M., St. Louis  
Ossman, Julian A., Jefferson City  
\*O'Toole, Pat., Jefferson City  
\*Otto, L. J., Jefferson City  
\*Oungst, D. W., Columbia  
Overholser, Milton D., Columbia  
Owens, James F., St. Joseph  
Padberg, Louis R., St. Louis  
Padgett, Earl C., Kansas City  
Panettiere, Andrew H., St. Joseph  
Parker, Harry F., Warrensburg  
Patterson, William R., Warrensburg  
\*Patton, Lotta, Jefferson City  
\*Pavitt, H. C., Jefferson City  
\*Payne, Eleanor, Jefferson City  
Pearse, Herman E., Tonganoxie, Kansas  
Pendleton, Geo. F., Kansas City  
Perry, John M., Princeton  
Peters, Melvin L., Cameron  
\*Phillips, A. B., St. Louis  
\*Pickett, Mrs., Jefferson City  
\*Pickett, Mr., Jefferson City  
Pipkin, Garrett, Kansas City  
Pipkin, Walter D., Monroe City  
Pittam, Radford F., Kansas City  
Platz, John H., Washington  
Pletcher, Kenneth E., Eldon  
\*Polksy, M. M., Columbia  
Popejoy, H. R., California  
\*Prenger, Esther, Jefferson City  
Probstein, Jacob G., St. Louis  
Pulliam, Madison J., St. Louis  
\*Raine, James A., Gorin  
Rambo, William W., Jefferson City  
\*Records, John W., St. Louis  
Reser, Thomas S., Cole Camp  
Ridge, Frank I., Kansas City

\* Visitor



- Rinkel, Herbert J., Kansas City  
 \*Roach, L. H., Columbia  
 \*Robbins, Frederick C., Columbia  
 \*Roberts, W., Columbia  
 \*Robertson, George W., Columbia  
 Robichaux, Eugene B., Excelsior Springs  
 Robinson, E. Kip, Kansas City  
 Robinson, G. Wilse, Kansas City  
 Robinson, G. Wilse, Jr., Kansas City  
 \*Robinson, Paul E., Kansas City  
 \*Robinson, R. L., Jefferson City  
 Robnett, Dudley A., Columbia  
 \*Rohrer, John, Columbia  
 \*Rose, J. W., Columbia  
 \*Rosenthal, W. A., Kansas City  
 \*Ross, Minnie O., Jefferson City  
 Runde, R. H., Mt. Vernon  
 Rusk, Earl McD., New Bloomfield  
 \*Russell, Arch S., Columbia  
 Russell, Daniel R., Kansas City  
 Russell, Richard L., Springfield  
 Ryan, John H., St. Joseph  
 Ryan, Robert A., Mountain Grove  
 Ryland, C. T., Lexington  
 \*Salinsay, L. V., Kansas City  
 Sauer, William E., St. Louis  
 Scarpellino, Louis, Kansas City  
 Schisler, Edwin J., St. Louis  
 \*Schlein, Etta, Jefferson City  
 Schlueter, Robert E., St. Louis  
 \*Schmidt, Florian E., St. Louis  
 \*Schmidt, Mrs. Hugo, Jefferson City  
 Schmiemeier, Herman A., St. Louis  
 Schofield, Linn J., Warrensburg  
 Schorer, Edwin H., Kansas City  
 Schudde, Otto N., St. Louis  
 Schuhmacher, N. R., Kearney  
 Schwarz, Otto W., St. Louis  
 \*Scothorne, Hasseltine, Jefferson City  
 \*See, William, Columbia  
 \*Serviss, Eugene, Jefferson City  
 Sewell, W. S., Springfield  
 Sexton, Daniel L., St. Louis  
 \*Shackelford, Col. Earl, Jefferson City  
 \*Sharp, Thomas M., St. Louis  
 Shaw, William J., Fayette  
 Shelton, Edward C., Eldon  
 Shelton, Edward O., Eldon  
 \*Sheppard, M. C., Jefferson City  
 Sherman, Victor E., St. Louis  
 Shryman, Ferdinand, Concordia  
 \*Shull, Donald, Columbia  
 Shutt, Cleveland H., St. Louis  
 \*Siegel, Carl DeH., Columbia  
 \*Simison, E. V., Columbia  
 Simon, Jerome I., St. Louis  
 Simpson, Emerson L., Springfield  
 Simpson, Morris B., Kansas City  
 Simpson, Robert H., Columbia  
 Skinner, Edward H., Kansas City  
 \*Sloan, Emma Lee, Jefferson City  
 \*Smead, W. H., Columbia  
 Smith, Clinton K., Kansas City  
 \*Smith, C. Souter, Springfield  
 Smith, Dudley, St. Louis  
 Smith, Edward S., Kirksville  
 Smith, Gervais D., Bolivar  
 Smith, James E., Rolla  
 \*Smith, Nevah, Jefferson City  
 Smith, Rollin H., Rich Hill  
 Smith, Stephen D., Columbia  
 \*Smith, Ted W., Kansas City  
 Smith, Wallis, Springfield  
 \*Snorgras, Lucille, Jefferson City  
 Spence, Elbert L., Kennett  
 \*Stark, Gov. Lloyd C., Jefferson City  
 Stauffacher, C. Gordon, Sedalia  
 Stauffer, Harry B., Jefferson City  
 Stevens, Roy U., Kansas City  
 Stewart, James, Jefferson City  
 Stewart, William J., Columbia  
 Stindell, Charles E., St. Louis  
 Stine, Dan G., Columbia  
 Stocker, Jesse A., Mt. Vernon  
 \*Stockley, Gertrude, Jefferson City  
 Stockwell, A. Lloyd, Kansas City  
 Stratton, C. D., Rothville  
 Stricker, Emil A., St. James  
 Stufflebam, A. J., Humansville  
 \*Suggett, Finis C., Columbia  
 \*Suggett, Thelma, Jefferson City  
 \*Sullins, W. E., Columbia  
 \*Sullivan, W. J., Kirksville  
 Summers, J. S., Jefferson City  
 \*Summers, Joseph S., Jr., Columbia  
 Swahlen, Percy H., St. Louis  
 \*Talbot, Blake S., Columbia  
 Talbot, Hudson, St. Louis  
 \*Tate, R. M., St. Louis  
 Taylor, Herbert I., Jefferson City  
 Taylor, Leon A., Jefferson City  
 \*Taylor, Louise, Jefferson City  
 Teachenor, Frank R., Kansas City  
 Thiele, George H., Kansas City  
 Thompson, F. Gregg, Jr., St. Joseph  
 \*Thompson, John M., Columbia  
 Thompson, J. William, St. Louis  
 \*Thompson, Margaret, Jefferson City  
 Thompson, Ralph L., St. Louis  
 Thornburgh, Albert H., West Plains  
 Thurman, Joseph L., Potosi  
 \*Tingle, Mrs. R., Jefferson City  
 Trigg, Joseph M., St. Louis  
 \*Trippensee, Mrs. E., Jefferson City  
 \*Tucker, Mildred, Jefferson City  
 \*Turnbull, Myra, Jefferson City  
 \*Upham, J. H. J., Columbus, Ohio  
 Van Ravenswaay, A. C. H., Boonville  
 \*Viscofsky, Jack, Columbia  
 Vitale, Nicholas S., St. Louis  
 Vohs, Carl F., St. Louis  
 Waddle, Theodore L., Dexter  
 Wakeman, J. Newton, Springfield  
 Walker, George W., Cape Girardeau  
 Walker, Grant D., Eldon  
 Walters, Archie L., Sedalia  
 Walther, Roy A., Overland  
 Washburn, J. Loren, Versailles  
 \*Watkins, R. L., Excelsior Springs  
 Weir, Edward F., Meadville  
 \*Wells, L. T., Columbia  
 \*Wellstead, R. L., St. Louis  
 Werner, August A., St. Louis  
 Werner, Charles H., St. Joseph  
 Wessling, Frederick J., Hermann  
 West, William M., Monett  
 \*Wheat, Frances, Jefferson City  
 White, Orville O., St. Louis  
 White, R. Ned, Springfield  
 \*Whitlock, G. F., Columbia  
 Wilcox, Claude V., St. Louis  
 \*Wilcox, W. D., Philadelphia  
 \*Wilhelmi, Otto J., St. Louis  
 Williams, John W., Springfield  
 \*Williams, Mrs. L., Jefferson City  
 Williams, R. S., Mexico  
 Williamson, W. H., Mokane  
 Wilson, General S., Fortuna  
 Wilson, Ralph R., Kansas City  
 \*Wilson, Virginia, Jefferson City  
 \*Winchester, A. N., Joplin  
 \*Winter, P. J., St. Louis  
 \*Wisch, Andy, Jefferson City  
 Withers, Orval R., Kansas City  
 \*Wolff, S. J., St. Louis  
 \*Wood, Mrs., Jefferson City  
 Wood, A. M., Shelbyville  
 Wood, George H., Carthage  
 Wood, V. Visscher, St. Louis  
 Woolsey, Ross A., St. Louis  
 Wulff, George J. L., Jr., St. Louis  
 \*Wyly, W. J., Kansas City  
 Yoskit, Harry, Festus  
 Young, H. McClure, Columbia  
 Zahorsky, Theodore S., St. Louis  
 Zeinert, Oliver B., St. Louis  
 Ziegler, William H., Boonville  
 Total, 692.

## FIRST COUNCILOR DISTRICT

### A. S. BRISTOW, PRINCETON, COUNCILOR

#### Atchison County Medical Society

The Atchison County Medical Society held a special meeting at Rockport, June 13. Those present were: Drs. J. A. Gray, Watson; O. A. Hunter, Fairfax; C. H. Flynn, Tarkio; E. B. Settle and W. R. Strickland, Rockport, and A. S. Bristow, Princeton.

Dr. A. S. Bristow, Princeton, Councilor of the First District, discussed the plan for clinical conferences and health education on maternal and child welfare for lay groups in Atchison and Holt counties. The Society agreed to cooperate fully.

A resolution was passed opposing the expansion of the State Cancer Hospital, the Society feeling that it should be limited to indigent cancer patients.

Dr. C. H. Flynn, Tarkio, was elected to the Advisory Committee to the Committee on Public Policy and to the special committee to study the revision of the medical practice act.

The meeting adjourned subject to call.

WILLIAM R. STRICKLAND, M.D., Secretary.

#### Buchanan County Medical Society

The Buchanan County Medical Society met April 6 at the Missouri Methodist Hospital at 8 p. m., the president, Dr. G. T. Bloomer, presiding.

Dr. S. Earl Senor, chairman of the library committee, presented the question of cataloguing the Medical Society Library. It was moved by Dr. E. M. Shores and seconded by Dr. Albert Muench, that Dr. Senor be authorized to have the rest of the books moved to the Missouri Methodist Hospital. Dr. W. T. Elam moved, seconded by Dr. Shores, that Dr. Senor be authorized to have the library catalogued, the expense to be paid by the Society. Both motions carried.

Dr. James O'Donoghue reported briefly on the activities of the cancer committee.

Dr. H. E. Peterson, chairman of the tuberculosis committee, called attention to the early diagnosis campaign.

Dr. E. M. Shores reported a meeting of the committee from the Society with Mr. W. J. Bryan, manager of the Retail Credit Bureau, to work out a plan to provide credit rating of patients and a collection agency for members. Mr. Bryan informed the Society that his association could not provide a collection agency.

Dr. H. E. Peterson presented a film "Behind the Shadows" which was given under the auspices of the Buchanan County Tuberculosis Society. Dr. Peterson

in his remarks during the showing of the film emphasized the intradermal test, the roentgen ray of positive reactors and the finding of contacts.

Dr. W. L. Kenney, president of the St. Joseph Society of Ophthalmology and Otolaryngology, presented a resolution covering the following: "Inasmuch as there had been a great increase in the number of patients cared for by the Missouri Commission for the Blind and due to the fact that this takes much of the time of the ophthalmologist and his office assistants which is given without pay although the remaining personnel is paid for its services; therefore the members resolve that the Missouri Commission for the Blind should arrange so that the eye physicians are paid half of their regular fee for services rendered." On motion the resolution was adopted.

The secretary was instructed to take the names of members who wished to join the Retail Credit Bureau group plan. It was reported that the dental society had acted favorably upon the group plan.

Dr. C. P. Fordyce was unanimously elected to provisional membership.

The following communications were read: A letter of thanks from Dr. H. W. Orr; an acknowledgment from the Morton family of the flowers sent at the death of Dr. Morton and the letter sent by the Society when Dr. Morton was in the hospital.

The secretary was instructed to write Dr. W. E. B. Hall.

#### Meeting of April 13

The Buchanan County Medical Society met in joint session with the St. Joseph Clinical Society for a banquet and scientific program at the Robidoux Hotel at 6 p. m., April 13.

Following the banquet Dr. Clifford Grulee, Chicago, Professor of Pediatrics, Rush Medical School, spoke on "Intracranial Hemorrhage of the Newborn."

Dr. Hugo Ehrenfest, St. Louis, Emeritus Professor of Clinical Gynecology and Obstetrics, Washington University, spoke on "Birth Injuries."

After a most interesting and instructive meeting the Society adjourned.

#### Meeting of May 4

The Society met May 4 at the Missouri Methodist Hospital at 8 p. m., with Dr. F. X. Hartigan, vice president, presiding.

A quorum not being present the meeting stood adjourned at 8:30 p. m. without transacting any business.  
O. EARL WHITSELL, M.D., Secretary.

### SECOND COUNCILOR DISTRICT

H. B. GOODRICH, HANNIBAL, COUNCILOR

Adair-Schuyler-Knox-Sullivan-Putnam Counties  
Medical Society

The North Central Counties Medical Society met at the office of Dr. S. L. Freeman, Kirksville, on June 2, with the president, Dr. J. S. Gashwiler, Novinger, presiding.

Dr. H. B. Goodrich, Hannibal, Councilor of the Second District, gave an interesting and instructive talk reporting the activities of the State Medical Association and discussed trends toward the socialization of medical practice and some of the problems that confront medical practitioners now or may confront them in the near future.

Dr. W. J. Sullivan, medical director in charge of Unit 10 of the State Board of Health, which was recently established with headquarters in Kirksville, described the public health program which they hope to carry out in this district.

It was moved that the Society endorse the proposed basic science law for the State of Missouri and pledge help to secure its passage by the legislature.

A vote of thanks was given the speakers for their helpful and instructive talks and the hope expressed that they will have an opportunity to visit the Society again soon.

SPENCER L. FREEMAN, M.D., Secretary.

### Marion-Ralls County Medical Society

The Marion-Ralls County Medical Society met at St. Elizabeth's Hospital, Hannibal, June 3. The meeting was called to order by the vice president, Dr. W. D. Pipkin, Monroe City.

Letters of condolence were read and ordered sent to Mrs. Ellis Fischel and Mrs. Francis Reder, St. Louis.

Reports on the Jefferson City Session of the State Medical Association were made by Drs. W. F. Francka and H. B. Goodrich.

The Society adopted a resolution that "each vacancy occurring in the State Board of Health be filled by appointment by the Governor from a list of three names furnished the Governor by the Missouri State Medical Association. If the Governor cannot select an appointee from this list, a second list of three names shall be furnished by the Association and from these six names the Governor must select an appointee." The resolution is to be presented to the State Association.

Dr. Eugene M. Lucke, Hannibal, reported that he had been asked to give public health talks over radio station WTAD and asked the opinion of the Society. The secretary was instructed to ask the attitude of the State Association on these proposed talks over the radio.

B. L. MURPHY, M.D., Secretary.

### SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

Lafayette County Medical Society

The Lafayette County Medical Society met in the Public Library Building, Lexington, on May 24 at 8 p. m. Matters of routine business were disposed of.

Dr. Asa Barnes, district health officer, presented a motion picture showing various procedures in the diagnosis and treatment of syphilis.

A round table discussion of the treatment of syphilis in the indigent followed.

EDWIN S. WALLACE, M.D., Reporter.

## WOMAN'S AUXILIARY

Report of the President for the Year 1937-38

Mrs. CHARLES H. WERNER, St. Joseph

My report of the year's work is a summary of the reports of the officers and chairmen of standing committees, and it chronicles the gains made during the year.

A mutual understanding of each other as doctors' wives has been gained through the social activities of the Auxiliary and through the common problems and viewpoints faced by us. Recently many members have realized that we have need for a fuller knowledge of these problems and more general information on health topics which lay people are discussing. So we have set up programs with this in mind and have urged cooperation of all members and more and more members are becoming interested in these programs. Planning



toward a definite goal brings its own measure of success. The effort made toward that goal develops qualities with which members are equipped to go forward and to undertake some part of committee work or other auxiliary activity. Cultivation of tact, courtesy and a fair judgment of the efforts of others also plays a large part in the success of any program.

I assumed the duties and responsibilities of president at the convention in Cape Girardeau, May 12, 1937. In June I represented the Missouri Auxiliary at the national convention in Atlantic City attending all the business sessions and most of the social activities. Six delegates and two alternates also attended.

We have twenty-one auxiliaries representing twenty-five counties and the City of St. Louis. Miller County disbanded at the close of last year and is represented by two members at large; and there are members at large in three other counties. Of the above twenty-one auxiliaries, nineteen have carried out the state program and sixteen have paid dues for all members.

I have made twenty-one visits to eighteen of the active auxiliaries and have been present at all but one monthly meeting of my own auxiliary in St. Joseph. I have addressed all these groups in the interest of the auxiliary.

I also visited the officers of the two inactive auxiliaries to stimulate interest. They have paid some dues and promise to carry a program next year. I visited two other counties and discussed organization with officers of the medical society and some of the eligible women with no results.

I am sure that these visits have resulted in a united effort toward self education of the members and a greater amount of public relations work than had been attempted before. They also brought to me some of the happiest experiences of my year as president and many friendships which I shall treasure always. I covered 5378 miles in making these county visits.

In November I went to Chicago for the fall board meeting of the national Auxiliary. State presidents are members of the National Board during their terms of office. There was a large and representative attendance.

We have 997 paid members for 1937-1938. This is 52 per cent of the eligible women and a gain of sixty-one members over last year. We have stressed the slogan "Every Eligible Woman a Member" through the year and feel it has brought about this gain in membership.

We have done much public relations work, as follows: Seventeen auxiliaries advertised the A. M. A. broadcasts; twelve auxiliaries had members working with local or state boards of health; eighteen auxiliaries had members working with other groups, and nineteen auxiliaries held seventy-five public relations meetings, with physicians as speakers in all but seven meetings, and with about 7900 people in attendance. This is an increase of fifty-eight meetings compared with last year. It indicates auxiliaries are realizing the value of such meetings to both the lay public and the medical profession.

We sponsored our sixth annual essay contest, the subject being "Your Health and How to Preserve It." Prizes were given by the local auxiliaries and the state auxiliary to both senior high and junior high school students. In counties where essay contests could not be placed in the schools, physicians addressed student assemblies on health subjects and the plan proved to be popular. The contest was sponsored by eight auxiliaries and one member at large. Students in three other counties also sent entries.

We report a total of 665 subscriptions to *Hygeia*, an 80 per cent increase over last year. Of these we sent 319 subscriptions (annual) to schools, nine to libraries and eleven to charitable institutions. Jackson County Auxiliary received "honorable mention" in the national

*Hygeia* contest. Eight auxiliaries showed gains over last year's total, two reached their quota, while three others far exceeded their quota, Buchanan securing almost three times its quota and Cass County six and a half times.

This is the fifth year we have issued our Auxiliary Quarterly *Bulletin*, with printing cost financed now in the budget. This year we mailed it direct to members for the first time, which makes it more valuable as a contact between state officers and members. To cover the cost of mailing we assessed each auxiliary \$2. At the recent convention it was voted to have a 10 cent per capita assessment to cover this cost more equitably.

The October issue of the Quarterly *Bulletin* contained a "County Handbook Outline," conforming with the State Handbook and explaining the duties of each officer and chairman. It has been widely used.

A number of the county auxiliaries have philanthropic projects. The state auxiliary has none.

The need for an adviser is stressed by the national auxiliary and it does bring a closer tie between the medical society and the auxiliary. It is important, however, that the president of the medical society choose for adviser a doctor who believes an auxiliary is valuable and who knows something about auxiliary objectives and accomplishments. An adviser with such qualifications can be of immense value to both the medical society and its auxiliary.

Joint meetings are valuable in that they bring a greater friendliness between doctors' families.

Sixteen auxiliaries report that they have an adviser; thirteen have had twenty-two joint meetings this year; eleven have studied problems affecting the profession; fifteen have carried out part or all of the mental hygiene program, and sixteen have yearbooks. All show an increase over last year.

As president I have written 586 letters, 114 postal cards and five form letters and a questionnaire of which 324 mimeographed copies were mailed out. I have written articles for each issue of our Quarterly *Bulletin*, for the auxiliary page of several issues of THE JOURNAL, for the October *National News Letter* and for the convention supplement of the *California State Journal*. I have written reports for the meetings of the national board and for four state board meetings, also for our state convention. I have brought the history of the Missouri Auxiliary up-to-date for the national historian and our own "Archives."

I arranged for speakers before six groups and assisted in the formation of a local chapter of the State Mental Hygiene Association. Recently I was elected a director of the state association.

As state president, I served as a member of the Missouri State Committee of the American Society for the Control of Cancer; also as a member of the Advisory Board of the Women's Field Army for the Control of Cancer. I gave one of the Field Army broadcasts, attended three of their meetings and the state organization meeting.

We enjoyed a visit from our national president at Kansas City, in March. She addressed a board meeting in the morning and a general session in the afternoon. The Kansas City members were hostesses at luncheon. Auxiliaries in northwest and central parts of the state were represented at the meetings. Mrs. Augustus Kech's talks were much enjoyed.

On May 3 and 4, 1938, we held our annual convention at Jefferson City. Registration was 159, the largest ever recorded. Fine reports were given showing gains in all departments. There were many social activities. Much enthusiasm was shown by officers and delegates over the successful year and I predict continued advances for next year and bespeak your cooperation with my successor, Mrs. Herbert L. Mantz, Kansas City.

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### MENSTRUATION AND DYSMENORRHEA

WM. B. BROWN, M.D.

COLUMBIA, MO.

As resident physician in the health service of Stephens College, I have been impressed with the importance of certain problems connected with the phenomenon of menstruation and the disorders which frequently attend it. The impression prevails, and probably with good reason, that this aspect of women's health deserves more serious attention than is generally accorded to it in dealing with the physical and mental maladjustments common to women.

With this point of view in mind, I have endeavored to review the literature pertaining to the subject and to present some of the observations which I have made in the course of my duties as consulting physician to the young women of this college.

Menstruation, from its very nature as a spectacular recurrent natural phenomenon, has always appealed to the imagination of human beings and numerous taboos and superstitions have grown up around it. Among ancient peoples such as the Egyptians considerable attention was paid to it and the Ebers Papyrus<sup>1</sup> contains prescriptions for alleviating menstrual discomfort, as does the Kahun Papyrus<sup>2</sup> which says, "If thou examinest a woman who has pains in one side of her hypogastric region, then thou shalt say thereto: it is (due to) a disorder of her menstruation. Now after it has appeared, then thou shalt prepare for her: crushed onion, sbt, sawdust of pine; the hypogastric region is bandaged therewith." This quotation is from the earliest known medical writings of the human race. It dates back to about 1900 B. C.

Primitive peoples, such as certain of the hill tribes of India, today regard the menstrual function with awe and dread and the menstruating woman is segregated for the duration of the flow and then subjected to purifying ceremonies. The belief is widely held over the world, notably by the Parsee<sup>3</sup> women of Bombay, that menstruation implies a mildly dangerous state in which the woman is likely to cause difficulties in the domestic routines so she avoids the kitchen in order not to sour the preserves or spoil the cooking.

### MECHANISM AND FUNCTION

The newer knowledge of endocrine physiology has helped clarify and provide scientific grounds for the study of menstruation. Since a clear concept of the physiologic status of menstruation is necessary as a point of departure in any discussion of perverted menstrual function, I am summarizing the present day views of the mechanism and the significance of this cyclic event.

Simplified as far as possible the story may be retold as follows: Menstruation occurs as the breakdown or debacle of the entire monthly preparation for pregnancy. It represents a failure of natural forces to provide the uterus with a fertilized ovum for safe keeping or, as Williams<sup>4</sup> puts it, it is "the weeping of a disappointed uterus." In other words, menstruation is not a physiologic goal and it is not the culmination of a series of events intended solely to bring it about.

Beginning with the first day of a normal menstrual period, the process roughly is as follows: The endometrium sloughs away leaving a thin layer of glands in the basal portion from whose epithelium and stroma the new endometrium is to come.<sup>5</sup> By the fourth or fifth day after the onset of the flow the reparative process has begun to manifest itself, apparently in response to stimulation from estrone (folliculin) produced in a newly ripening follicle in one of the ovaries. The follicle itself has begun its maturation as a result of stimulation by the fraction of anterior pituitary hormone designated by Aschheim and Zondek as Prolan-A, so that the whole process seems to depend primarily on the production of this hormone by the anterior lobe of the hypophysis. As the follicle continues its growth and more and more estrone is produced the endometrium becomes thickened, the glands lengthen and gradually assume a tortuous, twisted course and the epithelial cells\* proliferate and accumulate secretory granules in their cytoplasm. The stroma becomes moderately edematous. Somewhere near the fourteenth day after the onset of the last flow the ovum is extruded from the ripened follicle, apparently as the result of stimulation from a second anterior pituitary hormone fraction called

\*"Not until after ovulation," advises Emil Novak in personal correspondence.



by Zondek Prolan-B\* and it begins its migration to and through the fallopian tube. In the meantime, the ruptured follicle seals over and its cells undergo changes in structure and function, becoming the corpus luteum and elaborating corpus luteum hormone or progesterone. In response to progesterone the endometrium continues its development, passing from the proliferative phase just described into the secretory phase. The glands become sharply convoluted, the epithelium buckled on itself so that it gives a dentate appearance in cross sections and secretory particles appear in the lumen of the glands. The stroma becomes swollen and takes on more and more the appearance of decidua.

If the ovum is fertilized in its passage through the tube these changes in the endometrium provide the anatomic basis in the uterus necessary for nidation of the early embryo. Menstruation then does not occur as the corpus luteum continues to function and the influence of progesterone maintains the secretory phase of the endometrium, with decidua and the succulent, vascular, glandular bed available for nourishment and attachment of the fertilized and dividing ovum. If conception has not taken place, however, the ovum dies, the corpus luteum subsides, Prolan-B† decreases, and the endometrium becomes necrotic to some extent and finally sloughs down to the basal layer. So another menstrual period is accomplished, not as an end in itself, but simply as the final stage of a disintegrating, failing mechanism deprived of a fertilized ovum.

#### TYPES AND CAUSES OF DYSMENORRHEA

The following data concerning the types and causes of dysmenorrhea are taken from Crossen<sup>6</sup> except in instances otherwise noted.

Dysmenorrhea or painful menstruation is not a disease; it is a symptom. In practically every case this symptom is due to a combination of abnormal conditions, local or general or both. Curtis,<sup>7</sup> however, in his textbook on gynecology, states that it must be treated as a disease.

Dysmenorrhea may be grouped, according to Crossen,<sup>††</sup> into four classes, each supposedly representing distinct etiologic factors, as follows: (1) neuralgic or ovarian dysmenorrhea, (2) congestive or inflammatory dysmenorrhea, (3) obstructive or mechanical dysmenorrhea, and (4) membranous dysmenorrhea.

Type 1 represents a neuralgia of the ovarian, uterine and other pelvic nerves coming on at the menstrual period because of increased pelvic congestion. The pain is sharp and changeable. It may radiate from the ovarian region to the uterine re-

gion, the lumbar area or down the thighs. Often there is accompanying headache. Frequently this type is associated with anemia, indigestion, neurasthenia and hysteria.

Type 2 is due to congestion within the pelvis, often of the pelvic adnexa. It may be due to displacement or inflammation in or around the uterus. The type of pain is a soreness or throbbing in the pelvis or back. The general pelvic soreness is increased by standing. Usually there is disturbance in the interval between the menses which may be evidence of displacement, inflammation or tumor that intensifies the chronic inflammation.

Type 3 may be due to a stenosis of the canal, spasmodic constriction of the circular muscles of the uterus or a swelling of the uterine mucosa. The obstruction is usually at the internal os. The cavity may be narrowed by a tumor, may be occluded by a polyp or it may possibly contain a blood clot. The type of pain is paroxysmal in character corresponding to painful uterine contractions in an attempt to expel an offending body. Painful menstruation due entirely to mechanical causes is rare.

Type 4 is the name given to that form of dysmenorrhea accompanied by the expulsion of membrane from the uterus. The pain is paroxysmal, corresponding again to the efforts of the uterus to expel some substance. The cause of membranous dysmenorrhea is not definitely known.

Physicians are not agreed as to the cause, or causes, of dysmenorrhea. Most students of the subject feel that no one condition could possibly explain the pain experienced by some women during menstruation. Causes of dysmenorrhea, especially in the virgin, may be listed as follows:

1. *Neurotrophic Dysmenorrhea*.—In a great number of cases of painful menstruation in the virgin there is a combination of conditions such as ante-flexion, slight stenosis and hyperesthesia of the uterine mucosa. The most tenable theory to explain the hypersensitiveness of the mucosa and muscle is that of nutritive disturbance which might explain the persistence of pain after removal of the obstruction or of hyperplastic mucosa. It may explain the pain in patients where no obstruction or structural change is found. The supposition that nutritive disturbance is an important factor may likewise warrant the institution of therapy directed toward improving nutrition and allaying nerve irritability. It has been observed that this type of treatment often produces much improvement without any local treatment whatsoever. Indeed, imperfect development of the uterus may well be due to nutritive disturbance for it is known that instances of this abnormal condition occur frequently at puberty, a period in development which is often accompanied by poor nutrition.

2. *Membranous Dysmenorrhea*.—Little is known as to the cause of this type of dysmenorrhea. Law-

\*Now called "Luteinizing Hormone" ("Prolan" commonly used for pregnancy urine principles). Personal communication from Emil Novak.

†"Also estron and progesteron": Personal correspondence, Emil Novak.

††This classification is omitted in Crossen's later discussion of dysmenorrhea. He points out in a personal communication that a more helpful "classification as to types should be based on deeper physiologic or pathologic differences, the elucidation of which we are still waiting for."

\*"Probably due to menstrual desquamation en masse instead of usual fragmentary manner." Personal correspondence from Emil Novak.

rence reported forty-two cases in which tubal and ovarian disease was present. He concluded that membranous dysmenorrhea is due to trophic changes in the endometrium secondary to adnexal diseases.

3. *Atrophy of the Uterus*.—In some cases in virgins past 30 and in a few sterile married women there seems to be a varying amount of uterine atrophy. A stem pessary may be useful here.

4. *Backward Displacement of the Uterus*.—Crosen<sup>6</sup> states that Kelly reported in 229 cases admitted to Johns Hopkins Hospital that 41 per cent were found associated with retrodisplacement of the uterus, 37 per cent with pelvic inflammatory disease, 11 per cent with fibromyomata.

5. *Myomata of the Uterus*.—These tumors frequently cause painful menstruation.

6. *Chronic Pelvic Inflammation*.—Salpingitis, oophoritis or a cystic ovary may give rise to dysmenorrhea.

7. *Pelvic Tuberculosis*.—This condition should be thought of whenever there is evidence of chronic pelvic inflammation, particularly in a virgin.

8. *Ovarian or Broad Ligament*.—Tumors in the region of these organs may likewise develop in a virgin and give rise to painful menstruation.

9. *Inflammation of Adjacent Organs*.—Menstruation may accentuate pain arising from inflammation of the bladder, rectum, appendix or of any other part of the pelvic adnexa.

10. *Functional Pelvic Congestion*.—Chronic functional congestion due to constant standing or long periods of walking may give rise to a very troublesome dysmenorrhea, which some writers have called the "fatigue type."

11. *Reflex Dysmenorrhea*.—In 1897 Fliess, a German rhinologist, presented to the Berlin Obstetrical Society a paper dealing with some cases of dysmenorrhea in which the pain disappeared after the application of 20 per cent cocaine to certain areas in the nose.

12. *Neurasthenia*.—This type of individual is subject to pains in the pelvis, as in other parts of the body. Such pains are probably most severe at the menstrual period.

13. *Hysteria*.—Patients subject to hysteria are prone to exaggerate the pain during the catamenia.

14. *Endocrine Imbalance*.—Ehrenfest,<sup>7</sup> in his article on menstruation and its disorders, states that "Cannon in his 'Modern Theories of Dysmenorrhea' says there is much evidence that the follicular hormone stimulates and corpus luteum inhibits uterine contractility." Thus, with some reason, arises the thought that endocrine imbalance might cause dysmenorrhea.

15. *Allergic Disturbances*.—Because of change in food and contact and hypersensitiveness of the nervous system, at the time of menstruation, it is not beyond possibility that altered reaction, or allergy, might well be the cause of some types of menstrual pain.

#### INFLUENCE OF PHYSICAL ACTIVITY

Indicative of the extensive interest which physicians and scientists manifest in menstruation and its disorders is the literature which comes from world wide sources. Of much interest are the contributions taken from Hugo Ehrenfest's<sup>7</sup> "Critical Review of the Literature, 1933-1936," inclusive, on menstruation and its disorders. Much study has been given to the influence of physical activity on the body during menstruation. Information from many foreign countries indicates a growing belief in the value of exercise on the menstrual function. The contributions from Ehrenfest's article follow:

Wagner, of Germany, emphasizes the necessity of proper hygienic dietary care at the time of the establishment of the menstrual function to aid in normal development, and warns against the harm which might result from overexertion or the use of tobacco, morphine or cocaine. Another German, Meyer, states that the mental strain which usually accompanies competitive athletics may disturb the menstrual flow.

Alice Clow, in England, studied 2300 school girls and found only six who disliked participation in games while menstruating but in no case was any ill effect noted.

Hoffman studied two groups, one of women working in various professions, the other of women in vigorous training to become teachers of physical education. In the last named group, in the earlier course of training, the percentage of menstrual anomalies was decidedly lower than in the first group. Then, after a further course in physical activities the percentage of disorders increased only slightly.

Iwata, in his study of Japanese girls, says that sport activity during menstrual periods rarely proved beneficial and in most cases it resulted in harm. Less than 50 per cent of his group devoted to athletics has normal and regular flow, a percentage far below that of Japanese and German non-athletic girls.

Klotz says that violent activity and competition during flow time invariably increase pelvic hyperemia. He points out also that swimming during this period may bring on sudden chilling with a resulting deleterious effect on the menstrual flow.

An investigation of teachers of physical culture by Kuestner showed that continuous physical exercise often is followed by a decreased flow and an increased amount of pain. Kuestner further maintains that too much sun light might result in endocrine dysfunction, due to an overexposure of ultra-violet rays.

Nizza, in his study of Italian girls, advises against excess activity during menstruation but states that exercise in moderation is beneficial.

Skerlj, in his very careful investigations of 152 girls, found much variation in the length of individual cycles, the duration and amount of bleeding. Strenuous exercise such as skiing altered the men-



strual period in 80 per cent of the girls. In 50 per cent of this group the effect became permanent.

#### GENERAL PREVALENCE OF DYSMENORRHEA

Stone<sup>7</sup> indicates that about 35 per cent of all adult women suffer some menstrual pain; that primary dysmenorrhea is the most common type and the most difficult to treat. Bell and Parsons, at the University of Michigan, found that 12 per cent (100 of 840) of all women complained of dysmenorrhea of a severe type. Of these 43 per cent had retroverted uterus, 9 per cent abnormal antelexion, and 48 per cent normal uterus. Twelve women required opiates.

A study of 14,000 students by Ruby Cunningham<sup>7</sup> at the University of California revealed that 50 per cent had some discomfort and 35 per cent complained of severe pain. A large group of the girls suffering pain at the time of menstruation also had poor posture, fallen arches, low blood pressure and poor nutrition.

In 1934 Stephens College (for girls) with an enrollment of 714 had 164 or 22 per cent of its student body who claimed to be suffering from menstrual pain. Of this number 30 per cent was of the severe type. In 1935, with a slightly increased enrollment, this institution showed a similar incidence. In 1936, with 931 students, 224 or 24 per cent claimed menstrual pain of some degree 32 per cent of which was of the severe form. For the year 1937, with an enrollment of 1170 students, Stephens College had 264 or 22 per cent who said they suffered pain at the time of menstruation. Of this number 28 per cent was of the severe type. In 1936, out of a total of 1460 patients who went to bed for all causes, 25 per cent claimed severe dysmenorrhea as the disabling cause.

#### PREVALENCE OF DYSMENORRHEA IN SEVERAL COLLEGES AND UNIVERSITIES OF THE UNITED STATES

During the months of February and March, 1938, data were secured from many of the leading colleges and universities of the United States. Letters were sent to 130 different institutions; fifty-five replied. The information included in many letters returned to me was admittedly "neither accurate nor complete." Accordingly, I have grouped twenty-nine institutions who gave comparatively complete and accurate data. It is found that of 31,309 students ranging from 16 to 26 years of age, 45 per cent<sup>\*</sup> claimed some type of pain at the menstrual period with about 2075, or 14.6 per cent suffering with a severe type of dysmenorrhea.

As noted elsewhere in this article, the treatments for dysmenorrhea are many and varied. Fifty-four different items were listed in answer to a question regarding treatment of choice. The therapies most favored were heat, endocrine, rest and analgesics. Opiates, dilatation and curettage, education and

psychotherapy were also named. Obviously the majority of the items listed were different trade names for analgesics and antispasmodics.

Statements were made to the effect that it would be impossible to tell how many students used opiates as an alleviating remedy for menstrual pain. However, of this group of 31,309 it was said that ninety-nine (from six colleges and universities) had a history of using opiates. In four of the six institutions girls who had previously used opiates for menstrual medication were apparently continuing the practice. However, it was stated by the majority of the colleges and universities that opiates were used rarely and only as a last resort.

Just as the treatments for dysmenorrhea are numerous, so are the alleged causes. In answer to the questionnaire, health and physical education directors listed twenty-six different causes of dysmenorrhea. Constipation, endocrine dysfunction, fatigue and nervous tension were chosen most frequently as etiological factors.

Miss Wilma Haynes, who is head of the physical education department at Stephens College and who has had ample opportunity to observe the prevalence of menstrual disorders through many years of work with young women, comments as follows about this subject in which she is deeply concerned.

Most students who have had dysmenorrhea previous to entering college improve in the special classes for these difficulties. The class exercises are arranged to improve the general tonus of the body, emphasis being put on strengthening the abdominal muscles especially as they relate to ptotic conditions. So-called relaxation exercises are a part of each lesson because I feel that a great many menstrual difficulties are due to tension.

Congestion or heaviness in the pelvic cavity during the period is a frequent complaint. Students report improvement of this condition after a few lessons.

It is interesting to note that just before vacations, when there is a great deal of excitement, and during vacations when students have gone at a rapid pace, there is usually an increase in menstrual pain. Generally speaking, this is especially true of the high strung, easily fatigued students.

Overloaded schedules, both academic and extra-curricular, with the accompanying nervousness and exhaustion, frequently bring about difficulties of profuse menstruation. Daily rest and, later, relaxation activities such as swimming with frequent rest periods during the activity, are important methods of treatment. Needless to say, an attempt is made to reduce the daily load.

In studies made at Stephens College I find a close correlation between dysmenorrhea and constipation. In most cases when the constipation is cured by special exercises the dysmenorrhea is also cleared. Cases in which this does not happen are rare.

Students in special classes are not given exercises and sent on their way. As much individual attention as seems feasible is given to them.

It is best with some students not to discuss the problem too often because they are "doomed to misery" with the attitude of being unwell and incurable; seemingly ignoring their condition works well with this type. Others are ready to report their progress impersonally.

Too often I hear reports from students that their doctors say these disturbances do not mean anything; that it is normal, that they will outgrow it and that the suffering is what the "female of the species" should expect.

<sup>\*</sup>This is the average percentage from 31,309 women. Incidences ranging from 2 per cent to 75 per cent were contained in the answers received.

Generally speaking, the whole question of menstruation should be explained to students simply and carefully. False ideas are common even among college students. It has been my experience that one of the valuable contributions which can be made to the health on a college campus is the education of girls in the whys of menstruation.

Doctors too often do not take the time to sit down with students and educate them in these matters; so the treatment becomes only a means of relieving pain for the time being, and the student leaves the clinic with the same false ideas and attitudes she had when she entered. I believe that a great contribution to the whole subject can be made by the doctor and the trained physical education teacher.

What seems to be a superficial thing in the minds of adults can be serious in the adolescent group.

#### COMMON TREATMENTS

Just as the theories on the cause of dysmenorrhea are multiple, so are the treatments. Heaney<sup>7</sup> says that with the discovery of each new hormone the literature is flooded with remarkable cures.

As indicated previously, treatment for menstrual pain at Stephens College, whenever possible, is directed along the lines suggested by Alice Clow<sup>8</sup> in England; namely, various types of exercises which we have found over a period of years to be perhaps the most beneficial treatment known for dysmenorrhea. Girls are assembled and put through exercises and relaxation periods. The original set of exercises as given by Dr. Clow follows:

1. *Floor Polishing*.—Kneel on "all fours." Swing right arm with elbow stiff through a semicircle as if polishing the floor, reaching as far forward and as far backward as possible. Repeat swing ten times with each arm.

2. *Bending*.—Stand with feet apart. Stretch arms above head, bend forward and touch ground with knees straight. Return to first position. Repeat slowly eight times.

*Twisting*.—Stand with feet apart. Stretch arms to side on level with shoulders. Twist trunk round until right arm points directly backwards. Twist again until left arm points directly backwards. Repeat vigorously ten times.

*Swaying*.—Stand with feet apart. Stretch arms above head. Sway body and arms to right then left. Repeat slowly ten times.

3. *Rowing*.—Sit on floor with knees straight and feet pressed against wall. Lean forward and touch wall with knuckles allowing knees to bend slightly. Repeat rhythmically twenty times.

4. *Right to Left and Left to Right*.—Stand with feet apart. Swing right arm up as far as possible. Bend down bringing right arm over and touch left foot. Repeat six times. The same with the left arm and right foot.

5. *Floor Patting*.—Kneel, sitting back on heels. Twist body and tap floor with both hands four times on left side. Kneel upright. Twist body and repeat tapping on right side. Repeat eight times each side.

6. *Bean Picking*.—Throw 20 small objects, such as beans, on the floor. Pick one up at a time and place on a shelf above the head using hands alternately. Do it as quickly as possible.

Unfortunately, perhaps, not all girls can be prevailed upon to go through the routine of different types of exercises over a period of several weeks and so they appeal to the infirmary for relief. The physicians prescribe the usual bed rest, heat pad

to abdomen, antispasmodics and analgesics. A remedy of choice over years of experience at Stephens College is liquor of sedans, drams 1, together with aspirin, grains 5. Attempts at hormone therapy have not proved satisfactory.

Occasionally we encounter the pathetic and distressing victim of the inexcusable practice of opiate therapy for dysmenorrhea. The year does not pass without parents hurrying to the college to complain that their daughter is not receiving relief during her menstrual period by hypodermic injections. Their first reaction is to attribute this discontinuance of opiate therapy (to which they may have been accustomed at home) to wilful negligence on the part of the attending physician. Invariably, however, after a thorough discussion of the subject the father and mother are in favor of a less objectionable type of therapy and are thankful for the change in treatment.

In discussing the treatment for dysmenorrhea, Ehrenfest<sup>6</sup> discloses that Clow, in England, finds little use of drugs in treatment of essential or primary dysmenorrhea. She urges her patients to carry on their daily routines as regards bathing, exercise and work. Various special exercises such as knee, chest, hook, lying and curl positions, as before noted, are considered helpful by Clow, Bell and Parsons. In Germany hot mud packs are sometimes used.

Boynton, at the University of Minnesota, and Hartley obtained complete relief for 67 per cent of patients by use of calcium gluconate alone or in combination with viosterol.

Stone says that in his hands cervical dilatation produced the best results, gently done in the office with Hegar dilators during the latter half of the intermenstruum.

Curtis and Adair warn against use of the stem pessary because of possible danger of long retention, perforation and chronic infection.

Emil Novak states that "to give any ovarian (follicle hormone) preparation seems illogical because it is impossible even theoretically to figure how they could help. . . . Really, because of the estrin, these products should aggravate the pain. This would not apply to progesterone. Estrin increases the contractility of the uterus." Nevertheless, Tunis states that out of seventy-five patients sixty-five were cured and eight improved after administering six injections of 1000 mouse units each of menformon (folliculin) starting fourteen days after beginning of last flow. It must be remembered, however, that corpus luteum hormone seems to be the only logical agent which will relieve excessive uterine contractility.

The use of emmenin in 472 patients showed no effect in primary amenorrhea, as reported by Campbell. The most gratifying results in dysmenorrhea were obtained only when emmenin was continued through at least three consecutive menstrual cycles.

Dr. J. I. Brewer<sup>9</sup> states that "in some patients progestin or proluton H gives good results in dys-



menorrhoea, based upon the theory of the action of the corpus luteum. It is certainly worth trying.

Based on the idea of stimulating the formation of corpus luteum tissue is the administration of small doses of roentgen ray to the pituitary gland, said to be helpful in primary dysmenorrhoea.

Meigs says that "treatment of dysmenorrhoea with hormones is unsatisfactory."

Bailey and Cannady and many others claim good results from presacral sympathectomy for dysmenorrhoea. Ehrenfest adds, however, that this type of surgery is the last and only choice after all known therapeutic procedures have failed.

A prescription found to be valuable in the treatment of dysmenorrhoea among Stephens College students is given as follows:

R

Camphormonobromate	gr. ss
Atropine Sulphate	gr. 1/500
Papaverine Hydrochloride	gr. 1/4
Acetphanetidin	} aa
Acetyl Salicylic Acid	
M & ft. capsules as above.	gr. 3

Signa: Take one or two capsules every four hours as necessary for menstrual pain.

It is not therefore strange, with such a world of literature on dysmenorrhoea wherein any remedy may be extolled to the skies, to note the tendencies of writers to fall into the error of "after this, therefore, on account of this" (post hoc ergo propter hoc).

#### SOME PSYCHOLOGICAL ASPECTS OF THE MENSTRUAL PHENOMENON

A study of the psychological aspects of this problem by Thea Goldschmidt<sup>7</sup> indicates the belief that the unpleasant phases of menstruation are for the most part mental and "traditional rather than biological" and that "women are still under the primitive taboo."

Ehrenfest<sup>7</sup> himself points out that the rather frequently occurring combination of dysmenorrhoea and sterility "does not necessarily indicate a causative relation between these two conditions." The relation may be explained in some cases by the fact that a sterile patient is likely to exaggerate any anomaly however small of her menstrual function because in her own belief it may account for her inability to become pregnant.

A study by Lakeman<sup>7</sup> of healthy girl students and girls employed in industrial plants indicated that the laboring girls suffered most. Lakeman draws no conclusion inasmuch as it is perfectly plausible to suspect that girls who work subject themselves to every opportunity to miss work, or because of lack of specific instructions might regard themselves as semi-invalids during the menstrual flow.

It is often amusing to note the various uses which students as well as working girls make of the menstrual function. If a persistent but unwanted suitor prevails upon the lady for a date; if an examination

for which she is not prepared is suddenly scheduled; if some boring social engagement or other unpleasant diversion arises she immediately presents herself to the infirmary for bed rest and medications for "the curse."

Certain students having an aversion to any type of physical activity will demand of their physician excuses from physical education classes. In many instances the complaint is made that such activities increase the dysmenorrhoea or otherwise disturb the menstrual function.

Personal observations reveal that in women who suffer intolerably and perhaps flow excessively, extreme patience and kindness and comfort from any source, on the part of the husband or doctor will win the deep respect of the one who suffers and do much to promote domestic tranquillity.

#### SUMMARY

Many superstitions and taboos are set up around the normal, natural function of menstruation.

The process of menstruation is an intricate and complex endocrine mechanism not clearly understood.

The types of dysmenorrhoea are neuralgic, congestive, obstructive and membranous.

Of the numerous theoretical causes most authorities agree that dysmenorrhoea is due to a combination of conditions.

The very nature of menstruation and its disorders; the taboos and superstitions surrounding it; the seeming proclivity of women to forget dates, type of pain, amount of flow, duration and individual peculiarities, render the collecting of such data difficult and its value uncertain. Conversely, the painstaking and scientific collection of accurate data in the field of menstruation and its disorders promises hope of solution to some of the problems attending it.

There is as yet insufficient data to establish with certainty the value of endocrine therapy.

While excessive physical exercise may be injurious during the menstrual flow moderate physical activity probably is not harmful.

Certain exercises constitute perhaps the best type of therapy for dysmenorrhoea.

The incidence of dysmenorrhoea is quoted as high as 50 per cent of all women.

Many doctors probably are prone to dismiss the problems of menstruation as unimportant complaints.

Of medications, antispasmodics and analgesics are probably the best known forms of therapy.

Probably many of the unpleasant aspects of menstruation are conditioned by the psychological attitudes of the patient.

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## PRESENT DAY THERAPY OF VARICOSE VEINS

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The purpose of this paper is to review briefly the status of present day therapy of varicose veins and to emphasize some points of surgical handling of this common malady.

Varicose veins affect principally the superficial venous circulation in the legs. No attempt will be made to discuss varicocele, hemorrhoids or other forms of varices.

The loss of function in the valvular mechanism of venous channels accounts for the dilatation, tortuosity, sacculatation, edema, ulceration and other objective manifestations associated with varicosities.

*Etiology.*—There are no etiologic factors which have been shown to account altogether for varicose veins. Some believe the development may depend on a congenital defect in the valvular mechanism or an inherited predisposition. It is common experience to find the condition occurring in several members of a family.

Type of labor, other things being equal, has some bearing on the condition. Standing in one position for long periods of time, lifting heavy loads which increase intra-abdominal tension or other forms of hard labor may be contributing factors.

Varix associated with pregnancy usually occurs in the second or third month before the size of the uterus has developed to such an extent as to influence greatly the intra-abdominal tension. For this reason and the fact that varix occurs principally at two other important periods of life, i. e., puberty and the menopause, it has been suggested that an endocrine disturbance may be a causative factor.

Payne<sup>1</sup> found that varicosities occurred in the ratio of four females to one male. With the cases associated with pregnancy excluded other writers have found the occurrence in the ratio of two to one and sometimes even greater.

The onset is insidious, usually occurring during the growing years and progressing gradually. It also occurs frequently in individuals past middle life who have lost a good deal of the elasticity of the skin and much of the subcutaneous fat which aided in the support of the peripheral system.

*Anatomy.*—The great saphenous vein and its

tributaries make up the principal superficial network in the leg. It originates as the median marginal vein of the dorsum of the foot and ends in the femoral vein about 3 cms. below the inguinal ligament. It has from ten to twenty bicuspid valves, being more numerous in the lower one half of the leg. The small saphenous vein begins behind the lateral malleolus as a continuation of the lateral marginal vein and extends upward in midportion of the calf to the lower popliteal space where it perforates the deep fascia and ends in the popliteal vein. It has from nine to twelve valves in its course.

The deep venous system has communicating branches between the saphenous magna and small saphenous veins. The communicating branches are supplied with valves which admit blood from the superficial system into the deep system and carry it toward the heart. The communicating veins are more numerous in the leg than in the thigh.

*Pathology.*—The pathology has to do with the veins and the skin drained by the peripheral network. Due to the pressure of the column of blood the valves become inadequate and dilatation occurs in the great saphenous vein. The deep veins are protected by their anatomical position with support of the surrounding leg muscles.

Continuous back pressure causes dilatation, tortuosity, sacculatation and finally tissue acidosis. The accumulation of metabolic products and anoxemia interferes with the nutrition of the skin. This is objectively manifested by edema, later pigmentation and ulceration. Ulceration usually occurs above the ankle on the inner side of the leg over the tortuous varicosity. Trauma is usually a factor in the incipency of ulcer.

The ulcer usually becomes infected, increases in size and the edema persists. Scar tissue is formed and due to the inflammatory process we have the picture of brawny edema with extensive ulceration.

The advanced cases present some degree of lymphatic obstruction as a rule.

*Symptomatology.*—The symptoms produced by varix may be practically nil if uncomplicated. Usually if symptoms are present they consist of easy fatigue, a feeling of fullness or heaviness in the legs, burning, itching or occasionally cramps in the legs.

In those cases which have crural ulcers, edema and pigmentation, pain is always present and may be intense, severe enough to keep the patient awake at night or interfere with his occupation. Pain is the result of inflammatory processes and exposure of nerve endings in the ulcer proper.

Infection increases the severity of the symptoms.

Phlebitis or lymphangitis may occur at any stage, the portal of entry being at the ulcer area or the immediate surrounding tissue. Sometimes it may originate about the toes.

The treatment of phlebitis requires rest in bed with application of large moist dressings to the limb. External heat may be used over the dressing. Symptomatic treatment should be used as indicated.



Treatment is continued until local and general symptoms have subsided.

*Therapy.*—In the last few years many kinds of solutions have been used for occluding varicosities. The commoner ones are hypertonic solutions of salicylates, chlorides, sugars, also quinine-urethane and soaps of fatty acids of which sodium morrhuate is the most common one in use.

The ideal solution should produce no pain, be nontoxic and free from local or general danger.

Edwards<sup>2</sup> and also Shelley<sup>3</sup> have given a comprehensive historical background in the development of varicose vein therapy. Edwards gives in considerable detail the early records of treatment associated with this malady.

Many solutions have been tried and today the three solutions being used more than others are: (1) Sodium morrhuate 5 per cent; (2) quinine and urethane, and (3) invert sugars, hypertonic solution.

The complications following injection therapy are: (1) Drug idiosyncrasy which may produce collapse and death; (2) phlebitis sterile or infected in the vein; (3) slough at sight of injection, and (4) embolism. According to Ochsner<sup>4</sup> there are twenty-nine reported cases of fatal embolism in the literature; fourteen of these are authentic cases.

A detailed history and careful physical examination, including rectal and vaginal, should be made prior to institution of treatment. Urinalysis, blood Wassermann and other laboratory or roentgen ray procedures as may be deemed advisable in the individual case should be done. Pelvic and rectal examination are important to demonstrate any abnormality obstructing the venous return.

Contraindications to injection are as follow: (1) Unfavorable general condition, i. e., presence of renal insufficiency, cardiac decompensation, uncontrolled diabetes, syphilis, blood dyscrasias or febrile disorders. (2) Recent upper respiratory infection such as sinus infection, colds, bronchitis or tonsillitis. (3) Debility due to advanced age. (4) Presence of inflammatory changes in varices or history of recent phlebitis. (5) Hyperthyroid disease. (6) Local skin disease. (7) Inadequate deep venous circulation. (8) Presence of arterial disease, endarteritis, Buerger's disease, Reynaud's disease. (9) Portal blockage, cirrhosis of liver. (10) Late months of pregnancy.

*Examination.*—In determining the presence of varicosities and their estimation several procedures are carried out. If the vessels involved are not readily visible to the eye they may be demonstrated by the Swartz procedure or its modification by Homans, which is carried out by percussing the main saphenous trunk at the knee or along its course with the fingers of one hand, and the presence and size of the vessels can be estimated by the impulse felt with the fingers of the other hand when placed at the fossa ovalis in the groin. Similar percussion over the veins along the posterior

aspect of the leg will demonstrate if the small saphenous vein is involved.

#### STATUS OF VENOUS CIRCULATION

After careful inspection, palpation, arterial estimation, reflex and sensory examination, the status of circulation in the venous system must be determined. The Trendelenburg test has been the standard procedure for this estimation. This maneuver is carried out by elevating the leg while the patient is in a reclining position and draining all the blood from the surface veins. Apply a tourniquet at the fossa ovalis about the upper thigh so that it obstructs the superficial venous flow only. Allow the patient to stand erect. Normally the superficial veins will fill in from 30 to 40 seconds. If filling takes place slowly below the tourniquet and there is no further filling after the tourniquet is released, the test is said to be negative.

If, after the leg has been lowered, there is no reflux of blood through the communicating system but on release of pressure at the sapheno-femoral junction there is a rapid flow of blood downward through the internal saphenous, the valves in the saphenous are judged incompetent and this is called Trendelenburg positive.

Double positive is that condition in certain cases where there is an incompetence of both the superficial and communicating systems. Demonstration of the incompetency of the communicating veins is carried out by noting the time of filling in the superficial system with a tourniquet applied. If filling takes place rapidly, i. e., less than 30 seconds, the communicating branches are incompetent.

Perthe's modification of the Trendelenburg test is to place a blood pressure cuff over the fossa ovalis and inflate it enough to obstruct the superficial venous return. The leg is then exercised. If the deep circulation is patent the varices will be pumped empty and the patient will have no symptoms.

A comparative tourniquet test devised by Ochsner and Mahoner<sup>5</sup> which consists of the comparison of patient walking without the tourniquet and the tourniquet applied at various levels demonstrates whether the valves of the internal saphenous and communicating veins are incompetent; also whether the deep veins are patent.

A further test of the competency of the deep veins may be made by wrapping the leg from the toes to a point above the knee with an elastic bandage and ask patient to walk for some distance. If the deep veins are unobstructed the patient will be perfectly comfortable with bandage in place. But if there is an inefficient deep venous apparatus then there will be a sensation of discomfort and pain in the leg on exercise.

#### TREATMENT

For the purpose of treatment the varicosities may be divided into four classes: (1) If the varicosities involve only the short saphenous or small

segments of the great saphenous then as a rule they can be treated by injection alone. (2) Cases in which there is a demonstrable incompetent main saphenous trunk above the knee in which the action of gravity causes a distal reverse flow of blood in the vein with a competent communicating system, can be successfully treated by high ligation and injection. (3) Cases in which there is an incompetent perforating system as well as superficial inadequacy that have not gone on to ulceration may be treated by ligation and injection but some of them may require surgical therapy. (4) Those cases in which there is an incompetency of perforating and superficial systems associated with brawny edema and ulceration will, in the majority of instances, require surgery for a permanent cure. The surgical handling of these cases will be given further consideration later.

The injection therapy consists of introducing into the vein solutions which by chemical irritation or osmotic activity produce changes in the endothelium of the vessels which cause thrombus formation and its later conversion into a fibrous cord.

The necessary supplies for injection consist of: (1) Esmarch's bandage; (2) 5 cc. syringe, or larger if some of the invert sugars are used; (3) short bevel needle 22 to 24 gauge, about 1½ inches long.

A light rubber Esmarch's bandage or tourniquet is applied to the limb above the site of proposed injection with patient in standing position. Have pressure tight enough to obstruct the superficial venous flow only.

Patient is then instructed to lie down on the table or couch and the skin is prepared. The needle is inserted into the most distal vein to be injected. Care must be exercised in introducing the needle not to pass through both walls of the vein. The vein wall is often very thin and due to tortuosity it is easy to pass through the vein producing a small hematoma. Keep the needle as nearly parallel to the skin as possible during the introduction. A little backward pressure on the plunger will demonstrate that the needle is in the lumen. Tourniquet is released and the injection is given. Pressure should be applied over the injected segment for several hours. This may be accomplished by a pad or an elastic bandage. Two or three segments may be injected at one time at weekly intervals.

Sodium morrhuate 5 per cent, in quantities of from 2 to 5 cc. has given excellent results. Quinine urethane and hypertonic solutions of invert sugars are also used frequently. Sodium chloride is an excellent sclerosing agent but painful.

A large percentage of cases where injection alone was used showed recurrence. Ochsner and Mahoner<sup>6</sup> report twenty-five patients, who were observed after injection alone, had a recurrence of 57.5 per cent in from six months to three and one half years.

There is practically 100 per cent recanalization of the varicose veins injected although all of them do not show a return of the varicosities.

A few years ago a good many clinics were reporting spectacular results from injection therapy alone and stating that the handling of varicosities was no longer a surgical problem.

It has been shown that injection is by no means a bonanza in the therapy of this condition. The majority require ligation prior to injection and many require additional surgical procedure to effect a cure. Hawkes and Borsher<sup>7</sup> have demonstrated that high ligation is much more successful than ligation in the midhigh or lower thigh.

Ligation at the fossa ovalis can be done under local anesthesia. The position of the proximal end of the saphenous is fairly constant about 3 cms. below the inguinal ligament and 4 cms. lateral to the pubic tubercle. Longitudinal incision about 1½ inches long over the fossa ovalis will give good exposure. After the uppermost end of the saphenous has been exposed ligation should be done above all tributaries. The other tributaries entering in this area usually emptying into the femoral are: (1) Superficial epigastric; (2) circumflex iliac, (3) external pudendal. It has been advised that these tributaries be ligated also to prevent a possible recurrence through one of them. Some authors believe that a retrograde injection should be made in the ligated stump, but others think a delay of several days is advisable.

If properly equipped this procedure may be carried out in the office. However, it is preferable to have patient hospitalized one or two days.

Other methods of therapy in the literature which will be mentioned briefly are:

1. Throne and Myers<sup>8</sup> report eight cases in which insulin had a healing effect on varicose ulcers and eczema. In those cases in which carbohydrate metabolism as shown by a tolerance test were suggestive of diabetes the response was more pronounced. There are many reports in the literature of cases with apparently normal sugar tolerance which have been cured by insulin.

2. Kovacs<sup>9</sup> reports fifty-four cases treated by iontophoresis. Forty-three cases of this group completed the treatment and only one did not show satisfactory results.

3. Peter Paterson<sup>10</sup> reports a simple method of operative care he used successfully on sixty-nine subjects. After the skin is sterilized, a catgut ligature of sufficient strength is passed through the skin by an ordinary surgical needle. The needle is entered close to the vein, passed under it at right angles to its course at that particular point and brought out close to the vein on the opposite side to that at which it entered. To prevent ulceration of the skin from pressure a small pad of gauze is placed over the vein and the ligature firmly tied over it. This is repeated at intervals of three to four inches along the course of the affected vein.

Those with ulcer and edema often require bed rest and elevation, others can be carried along successfully with some sort of external support such as an elastoplast bandage, Unna's paste boot or



Lassar's paste dressing. Adhesive plaster dressing plus an elastic bandage may be comfortable and promote healing. Sometimes a sponge dressing applied over the ulcer will give excellent progress in healing.

After the infection has been cleared up and healthy granulation established more rapid healing may be promoted by skin graft. The ulcer should be healed before other surgical measures are attempted. We have never found it necessary to excise an ulcer. Excision further diminishes the vascular bed and the chances of success are limited. Any open operation that offers the best chances of complete recovery is the one of choice.

The veins of the thigh can be excised by the method of stripping such as devised by Mayo. Often the stripper cannot be passed further than the midthigh where a small incision is made for ligation of communicating branches, and then the stripper passed on down to the region of the knee.

The manner of handling the veins below the knee will vary somewhat in each case. As a rule incision to expose practically all the veins or multiple incisions are necessary. All the varicosities are removed and the communicating branches ligated. It is essential that the communicating branches be properly handled in the lower leg. By careful dissection they can be seen piercing the fascia at point of junction with main trunk. The ligature should be placed at this point. If undermining to get exposure of veins is necessary, great care must be taken not to diminish the circulation in the skin flap. It is to be remembered that the nutrition of the skin is already greatly jeopardized, so gentle handling of the skin and subcutaneous structures is necessary. If it is advisable, depending on condition of skin, a flap may be turned up to expose varicosities below the knee. The incision should start at the upper portion of the calf and extend downward in a posterior median line to a point above the malleolus. The perforating veins can be exposed well in this sort of incision. Careful retraction on the flap is necessary, and the subcutaneous fat must be turned up with the skin. The line of dissection should be on the fascia of the calf.

Multiple small incisions in the region of the calf will give exposure to allow ligation and excision of the diseased vein in some cases. Careful hemostasis must be obtained before closure of the skin. The skin can be approximated by a continuous suture of dermal or silk. Skin clips should not be used as they will impair the circulation in the edges of the flap. A dry dressing is applied with external support which may be obtained by an elastic bandage.

The anesthetic may be general or spinal. Personally, I prefer spinal with the level of the anesthesia kept below the waist.

The danger from surgical therapy is postoperative embolism which is frequently fatal. Sometimes there is a slough of skin edges due to im-

paired circulation. Postoperative wound infection may be encountered.

#### SUMMARY

1. The etiologic factors are mentioned.
2. A short resume of injection therapy is given.
3. A method of injection therapy is described with contraindications and complications.
4. The methods used in examination are discussed.
5. Varicosities may be divided into four groups for purposes of treatment.
6. Other methods of treatment are mentioned.
7. A method of surgical handling is suggested.

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## INTUSSUSCEPTION WITH PROCIDENTIA THROUGH AN ULCERATED VENTRAL HERNIA

#### REPORT OF CASE

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Hernias on the ventral wall are not uncommon among the Chinese. That they are seen more frequently among the poorly nourished would seem to indicate a predisposing nutritional factor. They are also more prevalent in the poorer classes and among the Negroes in the United States. As the nutritional state becomes progressively poorer the diastasis of the ventral muscles becomes more pro-



Fig. 1. Patient at time of operation. Note charm in his hand.

nounced and the muscle fibers are thinned. The case presented here shows the extreme state which may arise if such a hernia be neglected. It is given also to emphasize the danger of routine empiric therapy that is so prevalent in many places where intestinal parasites are the rule rather than the exception.

Intussusception may conceivably occur in two directions. The proximal loop may be invaginated into the distal portion or the reverse may occur, the distal loop telescoping into the proximal portion. A survey of the literature fails to reveal any instance where both mechanisms occurred in the same individual. It would be very difficult to explain the exact process that could cause such a condition.

The case reported occurred at the American Presbyterian Mission Hospital in Hoihow, Island of Hainan, in South China.

#### REPORT OF CASE

L. E. T., a Chinese male infant aged 3 years by Chinese reckoning, 2 years by "foreign" reckoning, was admitted to the hospital on January 15, 1933, with the protrusion of a tongue of intestine four inches long from a wound just above the umbilicus in the midline. Fecal and purulent material was oozing from this mass. The mother stated that three months prior to coming to the hospital she noticed a lump in the midline just above the umbilicus which she could not push back. The mass became red and one month later it began to discharge pus. Five days before coming to the hospital, January 10, 1933, the mass broke open and a piece of intestine came through. This was followed by a period of two days in which the child refused all food and frequently vomited a brownish foul smelling fluid material. The child had cried almost constantly for the five days before admission. Since the mass opened the child had taken only small amounts of liquids and passed no feces. On the day before admission fecal material of a yellowish color was seen to pass from the end of the protruding intestine.

It was almost impossible to elicit any past history or family history because of language difficulties. The child was refused admission to another hospital on the day prior to coming to the mission hospital.

The intern who admitted the patient followed a routine preparation of the patient for surgical treatment. This consisted of a dose of oil of *Chenopodium* and castor oil together for the purpose of eliminating all

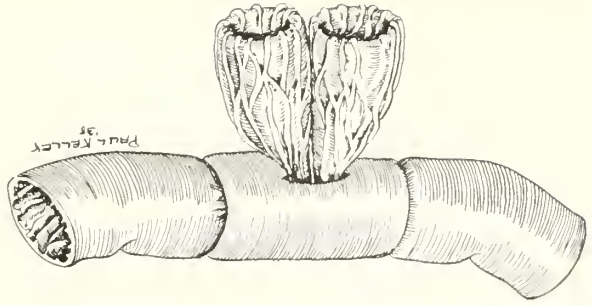


Fig. 3. Diagram showing mechanism of double intussusception.

intestinal parasites. The author was called to see the patient about half an hour after the administration of the oils.

At the time I saw the patient he appeared to be suffering acute pain and was prostrated. When the dressing was removed from the abdomen a tongue of intestine nine centimeters long was seen to be protruding from an ulcerated wound in the midline directly above the umbilicus. The base seemed to be adherent to the surrounding skin which was red, indurated and ulcerated. From the lower end of this tongue yellow fecal material was oozing. There was a foul smelling discharge from the point where the intestine emerged from the abdominal wall. The patient was very thin and looked acutely ill and extremely undernourished. The heart and lungs were clear. The patient was admitted in the late evening so it was decided to postpone



Fig. 2. Patient at time of operation.



Fig. 4. Patient four years after operation.



any operation until the following morning in order to give fluids and stimulants to the child, thus rendering him a little better able to undergo the treatment. In the morning the patient seemed to be in the same condition but when the bandages were removed, instead of one tongue protruding there were two to form a crude horseshoe shaped loop. The child had strained at stool but had passed nothing by the natural route. It was then decided that further delay would endanger the child's chance for recovery so an emergency operation was performed sixteen hours after admission to the hospital. The leukocyte count taken on admission was 30,400. No differential count or hemoglobin readings were taken. Urine showed a faint trace of albumen and a few pus cells. Wassermann and Kahn tests were not done.

At operation the stump of protruding intestine was clamped and freed from the infected abdominal wound. The wound was debrided and enlarged vertically. On opening the peritoneum intestinal clamps were applied one inch proximal and distal to the stump, which was a portion of the ileum. The mesentery adjacent to the injured ileum was resected in a triangular shape with the base at the ileum and the entire mass removed, care being taken to ligate the mesenteric vessels to the portion removed. An end to end anastomosis was performed, using No. 1 chromic catgut for the mucosal sutures and fine black linen thread for the two rows of sutures through the serosa and muscularis. A rubber drainage tube was inserted into the upper abdominal cavity and the wound closed by layers, using No. 0 chromic catgut for the peritoneum and subcutaneous layers, dermal catgut for the skin sutures.

Unfortunately the intern attempted to cut through the material removed before examination had been made. On opening it out to full length apparently seventeen inches of ileum had been removed. This had been telescoped at both ends, the tongue being intussuscepted portions from proximal and distal loops.

The sutures became infected and the wound gaped on the fourth postoperative day. The rubber drain had been removed on the second day. As the muscle fibers were so thinned out and the surrounding skin so friable no attempt was made at secondary closure. The peritoneum remained closed, so the skin edges were kept approximated by strips of adhesive and a tight abdominal binder. These were kept in place until the tenth postoperative day, at which time the wound was found to be well approximated and granulating over. Gas and a small amount of liquid feces were passed per rectum on the third postoperative day. Temperature dropped to normal on the fifth day and remained down up to time of discharge from the hospital on the thirtieth postoperative day. At time of discharge there was a small ulcerated area at the top end of the wound.

The patient was seen six weeks after leaving the hospital at which time the ulceration was smaller. There was no evidence of any break down of the wound.

On April 7, 1937, the patient was brought back to the hospital for photographs and final check-up. He was cheerful, quiet and cooperative. The wound is completely healed over but has a large stellate keloidal scar. The muscles are widely separated over an area extending from the umbilicus to the xiphoid and from the right midclavicular line to the left midclavicular line. The child has to wear a tight binder for support of the viscera. Kahn test proved negative, hemoglobin 70 per cent and leukocytes 11,600.

#### SUMMARY

A case is reported in which there had been a preceding hernia of the ventral abdominal wall above the umbilicus through which there had been a procidentia of intestine followed by intussuscep-

tion. Following the administration of a purgative and anthelmintic, a second, proximal (?) loop intussuscepted and protruded through the same wound in the intestinal wall as the first to form a horse shoe shaped loop. Photographs are given to illustrate the child at time of injury and four years following operation. A diagrammatic drawing is presented showing our conception of the probable mechanism involved in this double intussusception.

Too great emphasis cannot be placed on routine preoperative methods and also the danger that may arise from following such routine too closely. In this case the child's condition was made definitely more dangerous and treatment more difficult by the routine administration of anthelmintic and purgative.

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## EARLY SYMPTOMS OF GENITO-URINARY DISEASE

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#### REPORT OF CASES

Case 1. A young man, aged 26 years, complained of what he said was chronic gonorrhea. He had been treated for one year by means of irrigations. He still had slight discharge of a whitish mucoid appearance. This discharge was the only symptom of which he complained. He stated it was just the same as it was initially. A microscopic examination of this discharge revealed the presence of pus and a mixed flora. There were some bacilli and some cocci but no intracellular biscuit-shaped diplococci. The urine was cloudy in both glasses and in addition to pus it contained a considerable amount of albumin. Cystoscopy was performed with catheterization of both ureters and roentgen ray study. Stones the size of a pigeon's egg were found in both kidneys.

In this case a urethral discharge was the first objective sign of bilateral kidney stones. The discharge was due to secondary infection or, of course, the infection may have preceded the stone formation. In any case, pus and bacteria must have been coming down from the kidneys for a considerable length of time. This had brought about a chronic inflammation of the prostate. Of course, if this patient's urine had been carefully examined at any time during the last year, pus and bacteria in addition to albumin would doubtlessly have been found. The fact is, however, that he had been treated for a year under a diagnosis of gonorrhea.

Case 2. A young man, aged 23 years, complained of chronic gonorrhea. He had been sick for eight or nine months with slight frequency of urination, some burning at the end of urination and in the morning a drop of whitish mucus could be expressed from the urethra. The urine was hazy in both glasses, contained some pus cells and also some erythrocytes. There was a trace of albumin in the urine but no bacteria were found. A

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cystoscopic examination revealed the presence of a papilloma about the size of a strawberry but having a distinctly narrow pedicle with no inflammation of the surrounding mucosa.

Here again is a case that looks at first somewhat like gonorrhea. A tumor has formed in the bladder which has a rather narrow pedicle and therefore floats in the fluid medium. During the act of urination and especially toward the end of the act this tumor is thrown down against the internal urethral orifice. It acts as a valve interfering with urination, especially toward the end. The bladder makes an effort to expel it. The tumor may even be caught in the grasp of the internal sphincter margin and squeezed sufficiently to cause the appearance of a few drops of blood at the end of urination. There may or may not be demonstrable infection in such a case. Any infection found is secondary to the presence of something which acts like a foreign body in the bladder. The presence of gonorrhea has to be excluded in such cases which is done by failure to find the gonococcus even after provocation. After this has been done, the patient may be examined cautiously with a sound and ultimately through the cystoscope. The diagnosis must be made with the cystoscope, but this is employed only after removal of all contraindications. It is necessary not only to exclude gonorrhea but also overcome any hypersensitiveness that may be present when such a case is seen. The point which I wish to emphasize in this case is that a tumor of the bladder may present when first seen the clinical picture of protracted, rather severe gonorrheal prostatitis.

Case 3. A man, aged 40 years, complained of an injury to his testicle. He stated that after cranking an automobile he was seized with a sudden sharp pain in the right testicle. In the evening he noticed that the testicle was swollen. He had been unable to work since, that is for a period of ten days. He believed that he was entitled to compensation from his employer as the automobile was a very old one and difficult to crank. Examination revealed a tender, boggy swelling involving the scrotal contents on the right side. It was difficult to outline the epididymis or the testicle because there was considerable fluid in the tunica vaginalis. The urine was normal. There was no discharge nor had there been any history of antecedent gonorrhea. Rectal palpation showed no pathological swelling of the prostate or seminal vesicles. The prostatic secretion was normal. The Wassermann reaction was negative. There was no evidence of tuberculosis of the lungs or bones. The presence of tumor was suspected but it was not deemed wise to aspirate the fluid in the tunica vaginalis for fear of dissemination of tumor cells. The patient was taken to the hospital and an incision made through his skin to make it possible to palpate the testicle and epididymis. An indistinctly defined mass about as big as a pigeon's egg was discovered in the upper pole of the right testicle. It involved the true testicle and not simply the epididymis although it appeared to include a portion of the epididymis. The testicle was removed with as little traumatism as possible and the pathologist later reported a seminoma or an embryoma, teratoma type.

Tumor of the testicle commonly presents itself under the guise of an inflammatory process of some

sort. The surgeon would think of gonorrheal epididymitis, tuberculous epididymitis and syphilis. The diagnosis therefore has to be made by a process of exclusion. Gonorrhea is excluded by the absence of the gonococcus and also by there being no discoverable primary focus higher up in the genital tract. Syphilis is excluded by the Wassermann reaction, although even in the presence of a negative Wassermann reaction or other serological reactions, it is wise to employ therapeutic tests by giving the patient a short course of potassium iodide along with intramuscular injections of bismuth. If the swelling goes away we can be sure at least that we are not dealing with a malignant process. Tuberculosis is excluded by failure to find any tuberculous focus in the prostate or seminal vesicles, in the kidneys or outside the urinary tract. If the urine is absolutely normal in the presence of a testicular swelling it is unlikely that we are confronted with a tuberculous process. Embryomas of the testicle ordinarily begin in the rete testis, that is, at the upper pole between the testicle and the epididymis. Any swelling found in this region should arouse our suspicion at once. We must not allow ourselves to be misled by the patient's statement that he has received an injury. If the injury which these patients so often complain of has actually occurred and has had anything to do with the subsequent swelling, it is altogether likely that it has acted merely as an exciting cause. There is a widespread opinion among the laity that an acute orchitis can be due solely to some altogether minor trauma and this opinion is shared somewhat by the profession. I see no reason to believe, however, that this is the case. A swelling in the testicle and epididymis means either tumor or infection unless of course something like a really crushing injury has been received.

Case 4. A powerful young man, aged 25 years, reported that his left testicle swelled up suddenly after swinging a heavy hammer in a foundry. He, too, considered that he was entitled to compensation. He denied history of previous disease. Examination did not reveal any urethral discharge but the voided urine contained shreds, which when picked out and stained were found to contain pus and intracellular diplococci. Rectal palpation had been made before the discovery of the gonococci. The prostate was large, somewhat lobular, adherent and tense to the feel. It was sensitive and gentle pressure caused the escape of considerable purulent fluid from the urethra. The swelling of the scrotal sac involved the left epididymis only and not the true testicle.

Here we have a case which is sharply contrasted with the preceding one. In the tumor case the swelling involved the upper pole of the testicle and there was no attendant swelling of the prostate or the seminal vesicles. In the gonorrheal case, it was the epididymis which was involved and there was attending inflammation of the prostate and seminal vesicles.

Epididymitis is of course an exceedingly common complication of gonorrhea. In my experience, it is



generally precipitated by some indiscretion on the part of the patient. The history will be a Saturday night dance, an all day automobile ride involving the shifting of a tire with considerable exertion, climbing a hill or lifting a heavy weight. Occasionally one has the distinct impression that the epididymitis has been precipitated by some form of local treatment. There is no doubt that unwise instrumentation such as the passage of a metal instrument or rough, frequently repeated prostatic massage during acute gonorrhea may be the exciting cause of epididymitis. We know, however, that cases which are not treated at all present higher incidence of epididymitis than cases which are under active treatment by the surgeon. There is no reason, therefore, for believing that gentle irrigations and other local measures such as cautious feeling of the prostate gland during the declining stage of the gonorrhea is really responsible for epididymitis when it occurs following such procedures. In case 4 the epididymitis was the first symptom which the patient observed, or at least the first symptom which he admitted having observed. This may be because he wished compensation from his employer. But the surgeon should remember that if a testicle is swollen after wielding a heavy hammer but without any direct violence afflicted upon the testicle itself, the chances are overwhelming that the swelling is secondary to some previously existing disease. It is the duty of the surgeon therefore to examine the patient from every angle and discover the cause of this epididymitis or orchitis or whatever the swelling may be.

Case 5. A man, aged 65 years, stated that he had a prostatic disease. There was no doubt at all in his mind about that. He had some retention of urine and wet the bed at night. Questioning elicited that there was no continuous leakage of urine but that he simply voided without waking up. The initial examination of this patient consisted of testing for knee jerks and pupillary reactions. It was found that his pupils were fixed, that is, they did not come down when suddenly illuminated. Also, his knee jerks were absent. He had a 4 plus Wassermann reaction. Rectal palpation did not reveal the presence of an enlarged prostate and palpation over the pubis after urination did not reveal the presence of a distended bladder. The bladder symptoms had been the first to annoy the patient, causing him to seek medical advice. The diagnosis was *tabes dorsalis*.

The diagnosis of locomotor ataxia is not infrequently made by careful examination of the urinary tract. The patient comes complaining of retention, complete or partial, and cystoscopic examination may reveal the absence of any prostatic obstruction whatever. In fact, we find the opposite of prostatic obstruction. We find the internal sphincter relaxed so that the deep urethra is funnel shaped with the apex of the funnel at the cut off muscle. It is possible to examine the deep urethra with an ordinary indirect vision cystoscope. The *verumontanum* is seen lying on the floor of the funnel. The bladder itself shows fine trabeculation with relaxed trigonum. The trabeculation which accompanies pros-

tatic hypertrophy is not attended by relaxation of the trigonum. The bladder is easily infected. When infection occurs, it is not likely to be overcome. We are, therefore, somewhat cautious about examining such patients with the cystoscope in the presence of an absolutely clear urine. Where, however, the bladder is already infected there is no need for such caution. An important point in case 5 is the history of bed wetting at night. The man with prostatic hypertrophy may be tormented at night by the necessity of getting up every half hour or so; he may have an overflow where retention is complete but voiding during sleep is a neurological phenomenon. It should direct the attention to the possibility of some disturbance in the innervation of the bladder. For this reason a history of bed wetting after puberty is exceedingly suggestive. But we see other conditions that give a clinical picture similar to that of prostatic hypertrophy. Among them is the nocturnal polyuria of Bright's disease. This will generally be attended by high blood pressure. A man who gives a history of getting up every hour during the night and always passing a large quantity of urine without difficulty should be examined at once, not simply as to the state of his prostate gland but as to the condition of his kidneys as well. True saccharin diabetes as well as the diabetes insipidus of pituitary disease may cause frequent urination both by day and by night. The point here is that the elderly man who comes stating that he has an enlarged prostate may well be mistaken on the subject even though some physician may have seen him and referred him with the diagnosis of prostatic hypertrophy.

Case 6. A young woman, aged 23 years, complained that for about a year she had been wetting the bed almost every night. A history elicited that she used to wet the bed as a small girl but that before the age of puberty she ceased to do so. She had been perfectly healthy ever since until about a year ago when she began wetting the bed again. Her urine was absolutely normal in every respect. Her reflexes were normal, she had knee jerks and her pupils reacted to light. Cystoscopic examination revealed nothing abnormal in the bladder. A roentgenogram showed a marked *spina bifida occulta*.

Here we encounter the symptom of bed wetting after puberty in an individual who has been free from the bed wetting of childhood for a period of as much as ten years. This symptom is one which should never be dismissed lightly. There is almost certainly some disturbance in the nervous control of the bladder, some imbalance between sympathetic and parasympathetic nervous control. We should never be contented in the presence of such a history with some plausible explanation such as overwork, anxiety or nervous exhaustion. These things do not cause bed wetting in a normal individual, in my opinion. Therefore, especially where the urine is normal chemically and microscopically, such a history of bed wetting as that described in case 6 demands an exhaustive neurological examination to discover its cause.

Case 7. A girl, aged 11 years, was brought by her mother because she had begun to wet the bed after having outgrown this habit several years previously. There was also rather frequent urination by day and she even had accidents at times while at play. The reflexes were normal but the urine was pale, slightly hazy and contained a trace of ambumin. A bacteriologic examination of a catheterized specimen revealed the presence of colon bacilli. Cystoscopic examination with catheterization of the ureters disclosed a bilateral pyelitis with colon bacilli from both kidneys.

Here is a case of bed wetting in a child approaching puberty who was thought to have outgrown the habit; but note that the child has not yet passed the age of puberty and cannot be assumed to have acquired the complete control that comes in later life. Also, note that involuntary urination has occurred even in the daytime while the child was playing. There is frequent urination by day indicating some irritability of the bladder. We think at once of the possibility of stone or other irritating pathological condition. Examination of the urine shows that it is an infection of the urinary tract in this case. A history of chills and even of simple fever can often be elicited and there may be some evidence that a pyelitis has existed for a number of years. The presence of a chronic irritation in a girl who is still immature both mentally and physically is sufficient to account for both the nocturnal and diurnal enuresis.

Case 8. A powerful man, aged 35 years, accustomed to hardships of all sorts, passed a urine which was bright red with blood and contained a few clots. He stated that he had never had any previous difficulty in the urinary tract. An immediate cystoscopic examination showed a bloody fluid coming from the right kidney. The excretion from the left kidney appeared clear. Ureteral catheterization of the right kidney obtained a fluid which in addition to blood contained some pus but no bacteria. A pyelogram showed an excavation in the lower calyx. Guinea pigs were inoculated and shortly developed tuberculosis.

Note that in the above case there had been no frequency or pain on urination. The cystoscope disclosed no ulceration in the bladder either about the ureteral orifice or anywhere else. It is true of course that frequent painful urination is characteristic of tuberculosis of the bladder. Where tuberculous ulcers are present in the bladder there will be painful urination. It is not true, however, that such ulcers are always present even in moderately advanced cases. We see cases of genital tuberculosis in which the patient complains simply of chronic swelling in the epididymis without any attendant urinary disturbances. Careful examination of such a case often will reveal the presence of a fairly advanced tuberculosis in one of the kidneys. The earliest symptom of a kidney tuberculosis may be hemorrhage as in the above case or it may be the presence of a hard, slightly painful mass in an epididymis. There may be fistulization secondary to a caseous process. Again the patient may come simply with slight urethral discharge which he takes to be a remnant of an uncured gonorrhea.

We must, therefore, think of tuberculosis in every obscure disease of the genito-urinary tract.

These cases were selected somewhat at random from my personal experience and illustrate the guise under which various genito-urinary diseases present themselves to the physician. The first symptom of a gonorrhea may not be urethral discharge; it may be the presence of blood in the urine. Probably a discharge can be discovered by the physician if he has his patient under close observation, but the patient may have noticed no discharge and may be brought to the physician simply by his discovery that there is a lot of blood in his urine.

The symptom of hematuria may be an initial symptom in almost every possible surgical condition of the urinary tract. It is, I believe, more profuse in benign conditions than in malignant ones, and this applies to malignant types of inflammation as well as to malignant tumors. Where hematuria is the initial symptom in a case of cystitis, that is, a case of simple primary inflammation of the bladder due to infection with some benign organism like the staphylococcus, other symptoms such as pain and fever are not pronounced and the condition yields readily to treatment. A profuse, disquieting hemorrhage is more often seen in benign hypertrophy of the prostate than in cancer of the prostate. In cases of cancer and tuberculosis, the bleeding is more often of a more insidious character. The urine will be cloudy or murky, sometimes grossly bloody, or again the blood may be found only on microscopical examination. It is a mistake, therefore, to think that the presence of a little blood is of less serious import than a profuse hemorrhage. I believe that the opposite is in reality the case. The finding of any blood at all, beyond the occasional blood cells found microscopically which may be accepted as normal, is an indication for careful examination of the entire urinary tract, to discover the cause; and the first examination indicated in all such cases is a bacteriological examination. To use the cystoscope on a patient because he has a hematuria without a preliminary bacteriological examination may result in serious complications if the case is one of acute gonorrhea. While the finding of blood in the urine is always a disquieting circumstance and may point to the presence of some serious disease, it is really not necessarily of serious import and the occurrence of bloody semen is in my experience always due to some entirely benign condition. It is not uncommon in young men who as a rule are greatly disturbed by it. My cases have all been the result of some chronic congestion or benign inflammatory process in the seminal vesicles and about the verumontanum. I remember one case which occurred in a man more than 70 years of age in whom there was no carcinoma, no tuberculosis and not even senile hypertrophy of the prostate. He was a bachelor who had lived all his life in full conformity to rigid principles as far as sexual activity was con-



cerned. Whether or not his life long celibacy had anything to do with his condition, I cannot say. At any rate he was an unusually robust individual mentally and physically. His condition yielded immediately to a course of prostatic massage.

The physician should rid his mind at the outset of the idea that there is any one symptom which is a pathognomonic initial symptom of any particular disease in the urinary tract. A gonorrhea may, and generally does, begin with some evidence of a urethral catarrh, that is there will be at first a tickling, then a slight swelling followed by some burning on urination. Such discharge as is present at first may look like an almost clear mucus though it rapidly becomes purulent. While this is perhaps the picture in the majority of cases, a great many cases of gonorrhea do not begin in this way at all. Perhaps it would be more accurate to say that if the case began in this way, this stage of the disease passed unnoticed. The patient may apply to the surgeon complaining of hematuria. He may complain of pain in the back, pain in the region of the appendix, all due to referred pain from a swollen prostate or seminal vesicle. He may come first with a swollen epididymis and high fever or with arthritis. In this latter case, we see that the initial symptom observed by the patient is outside the urinary tract altogether. I have not observed iritis as an initial symptom of gonorrhea but it can occur. The diagnosis of gonorrhea depends upon finding the gonococcus either in shreds from the urine or in the excretion expressed from the prostate and seminal vesicles. At times in chronic cases some provocative treatment may be necessary before the gonococcus can be discovered. This treatment should at first be mild such as the passage of an instillator and depositing a little silver protein in the deep urethra.

A urethral discharge is common in a great variety of genito-urinary diseases. A chronic discharge is found in stricture of the urethra from any cause, in tuberculosis of the prostate, urinary lithiasis and chronic infections with staphylococci or the colon bacillus. We should, therefore, dismiss the thought that a urethral discharge speaks almost certainly for the presence of gonorrhea. The physician who will systematically make a bacteriological examination of such discharges will be surprised to find how often the condition is really not gonorrhea at all. Patients are even more prone than physicians to believe that a urethral discharge means gonorrhea. This is especially true of young men who expose themselves to venereal disease. Some young men are so haunted by the fear of venereal disease that it is almost impossible to convince them that the discharge is due to some totally different condition.

Conversely, gonorrhea may persist for a long time without giving rise to any noticeable urethral discharge. I recently saw a married man 31 years of age who complained of a cramp like pain in the bladder at the end of urination. He denied any extramarital exposure but stated that two years

ago he had an acute swelling of the right testicle after lifting a heavy weight. He passed blood in the urine at that time and was in bed with a high fever for several days. He is perfectly sure that this was not gonorrheal epididymitis. He did, however, give a history of having had gonorrhea fourteen years ago. It was a severe case and lasted for many months. Microscopically, pus was found but no bacteria. The prostate was large, hard, nodular and fixed. Secretion was profuse and contained pus and many intracellular diplococci. It appears altogether likely that this man had had a gonorrheal prostatitis for many years. The fact that he is married and as far as he knows has not infected his wife should not be given too much weight. The probability is that his wife is infected, but a chronic gonorrhea often runs a mild course in women and until we get a chance to examine the wife we cannot assume that she is free from gonorrhea. The initial symptom of gonorrhea in women is at times absent. They have no symptoms to which they attach any importance. There is perhaps a slightly excessive moisture but there is no pain, no urinary disturbance and the woman feels perfectly well. She does not think it necessary to consult a physician. Chronic gonorrhea in women is compatible with perfect health and only the most careful examination will reveal the presence of the disease. It is women who more often present arthritis as an initial symptom of gonorrhea. They have probably had the gonorrhea for from three to eight weeks or longer, perhaps for a year or two, but they have never felt badly enough to go to the doctor.

Turning now to some of the less common conditions, the initial symptom of stone may be, as stated, urethral discharge. Stone is also a common cause of profuse spontaneous hematuria generally accompanied by pain in one of the kidneys. The pain may be referred down into the testicle or the labia of the corresponding side. Such a group of symptoms suggests the arrest of a small stone in the ureter but microscopic blood may be present in the urine without the accompaniment of pain and the mere presence of such blood gives no indication as to what the trouble is. It may be stone, tuberculosis, tumor, pyelitis from infection with colon bacillus or the staphylococcus, gonorrheal prostatitis or the hypertrophied prostate of old men. The presence of blood in the urine, therefore, whether gross or microscopic, should mean to the physician exactly what the discovery of a urethral discharge means; that is, the necessity of ascertaining the cause of this abnormal finding.

Much the same thing can be said of the occurrence of pain. I believe that at least half the cases which present the clinical picture of Dietl's crises are not due to the passage of a calculus down the ureter; exactly the same symptoms can be caused by the kinking of a ureter, by the passage of a small blood clot, a bit of mucus, the blockage of the ureter by a bit of tumor and reflux of urine from the bladder such as occurs sometimes in debilitated

individuals suffering from urethral obstruction. Fever means sepsis but the mere fact that a man is known to have a chronic urinary infection such as we see in elderly individuals with prostatic obstruction does not prove that every fever such a man experiences is due to urinary sepsis. It is altogether unreasonable to suppose that a man who has had pus or colon bacilli in his urine for two or three years and during these years has felt perfectly well, that is, has had a good appetite, been free from fever, able to attend to business with merely the necessity of giving some attention to his urinary apparatus, should suddenly begin to have fever without the intervention of some secondary cause. Again we are confronted by the necessity, both in cases presenting fever and in cases presenting pain, of exhaustively examining our patient before undertaking to say what is the trouble.

One of the commonest presenting symptoms in genito-urinary disease is some disturbance of urination. There may be frequency or urgency; that is, the patient not only has to go often but has to go in a great hurry. When the desire comes he must respond at once or he is likely to have an accident. In fact, there may be even an incontinence from this cause. But incontinence is not always attended by urgency; sometimes women complain of incontinence when they cough or lift a weight but have no other urinary complaint. Sometimes there is difficulty in getting the stream started and there may be dribbling after urination. There may be pain at the beginning of urination, during urination or at the end of urination. Sometimes a patient can pass water while sitting down or even squatting over a shallow vessel but cannot pass his water while standing up. A woman recently told me that she could pass her water while standing up but could not pass it when sitting over a toilet. Sometimes a patient can pass water while lying on the side but cannot pass it when sitting or standing. All such symptoms are important and they suggest a line of investigation. None of them tells us positively what is the matter. The following case will illustrate how misleading the symptoms may be at times.

Case 9. A woman, aged 50 years, married, mother of three children, complained of increased trouble for a number of years involving primarily the urinary tract. But in addition to her urinary trouble she had lost weight, had become weak and anemic, had no appetite and could not sleep. She thought she must have a cancer somewhere. It began with an apparently incurable trouble with her bladder. She had frequent, urgent urination and pain during the act although this pain ceased or at least got no worse at the end of urination. What impressed her especially, however, was pain in the abdomen, especially on the right side. This pain was so severe that she had contemplated an abdominal operation for the removal of her appendix or her gallbladder. One physician told her she probably had a floating kidney. All sexual relation with her husband had ceased because the act was so exceedingly painful to her. Examination showed a pouting of the mucous membrane at the urethral meatus. This looked swollen,

red and the patient winced when it was touched. She had made no particular complaint of pain in this region. She told us her pains were all higher up in the region of the uterus, tubes and appendix. She almost screamed when a metal catheter of small size was passed into the bladder. To our surprise the urine obtained was nearly clear. It contained few pus cells and few epithelial cells and only the faintest trace of albumin. There was a chronic urethritis from some cause resulting in such a degree of swelling of the mucous membrane of the urethra as to cause an eversion. The condition is often described in textbooks as a caruncle. Wherever a caruncle is found there is almost certainly some inflammation of the entire urethra and this inflammation may be secondary to a pyelitis in one or both of the kidneys. In this case it appeared unlikely that any pyelitis was present because the urine was so nearly normal. Therefore, the urethra was systematically dilated with sounds and the caruncle burned with the electric spark. Response was somewhat delayed but within a month or two the patient noticed marked improvement. Frequency and pain were subsiding and there was no longer any distressing pain in the region of the appendix, gallbladder and right kidney. At the end of three or four months she had gained about ten pounds, had a good appetite and was feeling fine.

Here, as far as symptoms of which the patient complains are concerned, she might have had almost anything possible to have in the urinary tract. Examination, however, revealed that she was suffering from the direct and reflex pain caused by the presence of a urethral caruncle. We cannot close our discussion with a case that better illustrates how misleading symptoms can be and how important it is to examine exhaustively every case that applies to us.

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#### CUTANEOUS ABSORPTION OF SEX HORMONES

Carl R. Moore, Jule K. Lamar and Naomi Beck, Chicago (Journal A. M. A., July 2, 1938), applied testosterone or testosterone propionate to the skin of rats and guinea pigs as an ointment. It is readily absorbed and either maintains the accessory reproductive organs of castrate male animals in a normal reproductive state or stimulates their development precociously in the young or decidedly above the normal levels in adult animals. These androgens, so administered, exert effects similar to those obtained following subcutaneous injections. They (1) maintain reproductive accessories in castrate males at all ages, (2) reconstitute castrated guinea pigs within seven days of treatment to a state of producing coagulable ejaculates on electrical stimulation of the head and (3) produce injuries to testes of normal growing young male rats. Face cream (stated to contain estradiol) sold commercially and recommended for the removal of wrinkles from normal women has decided internal effects when applied daily on the skin of experimental animals. Such treatments stimulate mammary development on normal male guinea pigs, induce cornified vagina lestrous smears in spayed female rats, maintain or increase normal growth of the uterus in young or mature spayed rats and reduce the weight of the testes by 80 per cent and the weight of seminal vesicles by 90 per cent in young male rats in comparison with normal litter mates. These results both emphasize the efficiency of applying hormones in a skin ointment and at the same time suggest caution in the use by normal persons of articles containing these active principles.



## A ROENTGENOLOGIST LOOKS AT GASTRIC CANCER

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Cancer of the stomach causes more deaths in males than any other form of malignancy. The Metropolitan Life Insurance Company<sup>1</sup> in their latest report covering a twenty year period lists gastric cancer first among all cancers in males and second in females. In females it is second only to malignancy of the genitals. The annual death toll from gastric cancer is about 38,000.

It is regrettable that the average case of gastric cancer comes to diagnosis too late for cure. About 50 per cent of gastric malignancy is diagnosed too late for surgical assistance. Of the remaining 50 per cent, in which surgery is indicated, only one half show an operable mass. These figures are only approximate and show slight variations in the statistics of various clinics. But we must not overlook the appallingly large percentage of fatalities produced by this condition.

There are many reasons for the present status of gastric malignancy. Perhaps foremost is the delay in seeking medical aid by the patient who has "indigestion." The vague symptoms of indigestion are only too often the primary signs of gastric cancer, especially in the patient past the third decade of life. While gastric cancer is occasionally found in young persons it is essentially a disease of the older age groups, showing a definite increase in older patients and reaching a peak in the age group between 65 and 75.

The etiology of carcinoma of the stomach is not known. According to Ewing<sup>2</sup> it probably starts as an overgrowth in a small area, primarily affecting the previously normal cells. These cells show atypical overgrowth and overnutrition. Subsequently, infection, erosion and ulceration may occur. This may explain the occurrence of carcinomatous changes in gastric ulcers. Haudek<sup>3</sup> wrote of the difficulty of differentiating between benign and early malignant lesions of the prepyloric area. This prepyloric area is the site of about 80 per cent of gastric cancers. Hampton and Holmes<sup>4</sup> found that 78 per cent of gastric carcinomas appeared at the pylorus and antrum, 12.3 per cent in the middle third and only 8.2 per cent at the upper third.

Perhaps the most common early sign is indigestion. When this persists more than a few weeks or returns after relief with ordinary medication it should be regarded as a serious indication and the patient subjected to further investigation, especially if in the older age group.

Indigestion, of which many people complain, should be regarded as serious since a careful investigation may reveal the cause as cancer. We must realize that we cannot depend upon the accepted clinical criteria for the early diagnosis of gastric cancer. Anemia, hemorrhage, anorexia and weight

loss are not symptoms of early malignancy. They are, indeed, the symptoms of advanced malignancy. A palpable mass is certainly not an early sign. Even here we are frequently misled for only about 50 per cent of gastric cancers exhibit a palpable mass. Pain is quite variable and apparently depends on the location of the lesion.

Lahey, Swinton and Peelen<sup>5</sup> of the Lahey Clinic speak of the early symptoms of gastric cancer based on a study of one hundred and ninety-five patients over the last seven years. They found 70 per cent had indigestion. Anorexia appeared in 42 per cent, pain in 30 per cent, weight loss in 25 per cent, vomiting in 28 per cent, dysphagia in 4 per cent, weakness in 13 per cent, hemorrhage in 4 per cent, constipation in 7 per cent, diarrhea in 7 per cent and mass in 1.5 per cent. The average duration of symptoms in those patients who showed an operable lesion at laparotomy was eight and one tenth months, and the average duration of symptoms in patients showing inoperable cancer was only eight and five tenths month. P. Bull<sup>6</sup> of Oslo in his study of 289 cases between 1913 and 1927, makes the very impressive statement that in 21.2 per cent of his inoperable cases the symptoms had lasted for only from one to three months. On the other hand, in 8.4 per cent of the resection cases symptoms were present for from three to four years.

Gastric analysis, searching for achlorhydria, food particles, Boas-Oppler bacillus, blood and tissue fragments, is not conclusive. It is, however, an acceptable adjunct to the general diagnostic procedure.

We must give due consideration to findings of anemia, anacidity, blood and tissue fragments. These are corroborative evidence of real value. Great strides have been made in the study of blood examinations of early cancer but no generally accepted test is known.

No dependence can be placed exclusively on laboratory findings since there are no positive serologic, biologic or other laboratory procedures which are specifically diagnostic of early cancer.

At the Second International Congress of Gastro-Enterologists<sup>7</sup> recently held in Paris, France, it was the consensus of opinion that the most rapid and accurate diagnosis of this condition could be obtained only by the closest cooperation of the surgeon, the physician and the roentgenologist. The history, physical findings, laboratory and roentgen ray evidence are all vitally interrelated. Stress was laid on the roentgen ray examination. This is justifiable for the careful roentgen ray investigation usually shows the presence of pathological change in the gastric walls or mucosa at a comparatively early stage.

Percy and Beilin,<sup>8</sup> Stewart and Illick,<sup>9</sup> Louis Gregory Cole,<sup>10</sup> Kirklin, Carmen and many others have done excellent work in presenting facts relative to the early radiographic signs of cancer. The radiographic diagnosis is dependent upon actual changes occurring in either the mucosa or the layers

of the gastric walls or both. These pathological changes vary according to the type of malignancy. The malignancy may form early tumor mass which, by projecting into the gastric lumen, causes definite change in the radiographic appearance of the barium filled stomach. Other types infiltrate the gastric walls producing comparatively stiff areas which are not subject to the normal changes produced by peristaltic waves. The ulcerating type has a different radiographic appearance and may be quite similar to that of ulcer.

A knowledge of the pathological types of gastric cancer is of great assistance in evaluating the changes visible in the roentgen ray examination. From the roentgen ray standpoint, gastric cancers generally may be divided into three main groups. One is of the vegetative or fungating type growing more into the gastric lumen than into the gastric walls. These ulcerate late in their progress. Another type grows into the gastric wall and also into the lumen but with definite ulceration which usually appears early. A third type essentially infiltrates the coats of the stomach showing little projection into the lumen and has less tendency toward ulceration. The more benign and less rapidly growing cancer shows the fungating growth extending into the lumen. However, any or all of these types may ulcerate. Probably the most malignant type is that which infiltrates the gastric walls with little tumor formation or ulceration until late in its progress.

Much material has been presented by various authors relative to the carcinomatous degeneration of gastric ulcers. Radiographically, it is impossible to differentiate between many malignant and benign ulcers. J. E. Raaf<sup>11</sup> in reporting 125 cases of ulcer from the Mayo Clinic stated that 27.1 per cent showed some hyperplasia of the excised ulcer. Two cases were definitely carcinomatous. The remaining were classed as being in precancerous stages of hyperplasia since it is considered that when the atypical hyperplastic cells invade the adjacent cellular structures they then become true cancer cells.



Fig. 1. Carcinoma of cardia. Only a small portion of cardiac end has been destroyed. The gastric involvement has not advanced sufficiently to produce gastrospasm.



Fig. 2. Comparatively early carcinoma of lesser curve near cardiac portion. This type frequently produces gastrospasm sufficient to cause hour-glass contraction.

P. K. Sauer<sup>12</sup> reports similar findings relative to the discovery of cancer in excised ulcers.

For the radiographic examination small amounts of suspension of barium in a suitable vehicle are used. The patient is instructed to take one or two small mouthfuls. This barium is watched while it passes through the esophagus and into the stomach. This is important since lesions of the cardiac end of the stomach quite frequently produce spasm of the esophagus. Close examination of the flow of barium into the stomach will frequently reveal the deformity of the stream of barium produced by a tumor. Again, the pathological lesion may originate in the diaphragmatic portion of the esophagus or some other portion of the esophagus and extend downward or upward. If there is any doubt, it may be advisable to use the fluoroscope the patient being in the horizontal position and the barium in the esophagus. This position also will show a more accurate outline of the size and contour of the cardiac end of the stomach. In the event of cardio-spasm where a definite tumor is not visible, a suitable antispasmodic such as 20 or 30 milligrams of benzedrine-sulfate should be administered immediately, bearing in mind the customary contraindications such as hypertension. If the esophagus and cardiac end of the stomach show no disease the patient is examined through the fluoroscope in a horizontal position with a small amount of the barium in the stomach. This barium suspension is pressed into the gastric rugae and the patient turned from side to side and even rotated to a prone position. In this way any defects of gastric mucosa can be determined. The stomach is then filled by sufficient barium suspension to produce a slight gastric distension. Fluoroscopy of the stomach at this time should be performed from all angles so as to visualize the gastric wall anteriorly and posteriorly and to outline the greater and lesser curvatures. The action of the peristaltic waves are studied to see if any portions of the gastric wall are not acted upon by the peristaltic wave. Such an





Fig. 3. Infiltration lesion of greater curvature producing comparatively little gastric deformity. This type usually is inoperable primarily because of location and the extent of involvement.

area should be closely scrutinized from various angles and several films made since an infiltrating carcinoma produces a fairly rigid wall which is not subject to flexible peristaltic action of normal tissue. Any defect of gastric lumen or contour should be the object of careful examination with several films made at the particular angle which best visualizes the lesion. In general, lesions of the greater curvature should be regarded as malignant until proved otherwise. Also it must be remembered that cancer of the cardiac portion of the stomach produces little pain and comparatively few symptoms until late in its course.

The action of the barium suspension in passing through the pyloric antrum, pylorus and duodenum should be carefully watched since approximately 80 per cent of gastric cancer occurs in the pyloric third of the stomach. Any defect in the contour, flexibility or mobility of these regions should be immediately registered upon films for future study.

Frequently it is necessary to repeat the examination. Since the diagnosis of early gastric cancer requires a most exacting and serious examination, the roentgenologist must not make the mistake of performing a casual routine gastro-intestinal examination. I believe it is wrong to form an opinion of the stomach condition from casual fluoroscopic examination followed by the customary one or two films. Louis Gregory Cole, in his excellent book on the subject, points out numerous pitfalls for the casual examiner. When one realizes that a small defect or area of infiltration can easily be overlooked, one also realizes that it may be necessary to compare a series of films and several fluoroscopic examinations before accurate diagnosis can be made. Frequently extragastric disease may produce gastric deformity. By mechanical pressure or reflex spasm this may be misleading but by the use of benzedrine or some similar antispasmodic the reflex spasm usually disappears and the gastric deformity, if due to organic lesions, will remain.

*Early Prepyloric Carcinoma.*—The early prepyloric cancer involving the antrum often produces roentgen ray signs similar to benign ulcer with spasm. The niche which is present will usually show some irregularity at the margin of the defect and, on pressure, the gastric rugae of this region show a mottling effect or may be completely absent. The normal striation will be changed. In benign ulcer the adjacent rugae show little deformity. Again, ulcers present more tenderness on pressure than is generally found with cancer. If the ulcer crater is more than 2½ centimeters in diameter it should be considered malignant unless there is rapid healing under medical treatment. This large ulcer is usually associated with changes in the mucosal pattern and deformity in the marginal walls of the crater with absence of gastrospasm when it is carcinomatous.

*Small Ulcerating Carcinoma.*—The small ulcerating carcinoma produces a tumor which, even in the early stages, is sufficient to form a slightly elevated ring or border about the ulcerated crater. When on the lesser curvature this ridge will appear under pressure as a curved clear strip separating the shadow of the barium filled ulcer crater from the adjacent gastric wall. When the lesion is on the posterior or anterior walls this ridge of tumor tissue will appear under pressure as a halo or clear translucent ring about the barium filled crater. The crater does not project beyond the gastric wall. There may be tenderness on palpation but the deformity of gastrospasm is usually absent. The small malignant tumor often has a pedicle projecting into the lumen of the stomach and may easily be mistaken for benign growth.

*Early Infiltrating Carcinoma.*—An early infiltrating or scirrhus cancer is difficult to diagnose. There is no appreciable defect in the gastric contour. The pathological change consists of infiltration of the muscular and connective tissue layers with a loss of normal elasticity. It is this type which can best be diagnosed by serial radiographs that



Fig. 4. Large penetrating ulcer with marked gastrospasm producing hour-glass type of stomach. These large ulcers of the lesser curvature should be regarded as malignant unless rapid healing occurs under medical treatment.

will show a lack of peristaltic contraction in the area of invasion. When this type of cancer involves the pyloric area it sometimes so stiffens the gastric wall that the pylorus is held open permitting the continuous passage of barium. This flowing effect is unusual and should be regarded as a significant phenomenon. Tumor formation is slow in this type of cancer. The indurated gastric wall is not flexible and does not react to peristaltic movement. Under palpation, by pressing with a finger or other small object, a large area of gastric wall is moved instead of the small area which moves when the normal stomach is palpated. Again, there is usually a fairly marked deformity of the mucosa in the area involved. Frequently no mucosal folds are visible.

The Cancer Commission of Harvard University<sup>13</sup> found interesting facts concerning metastases from gastric cancer. These are relatively restricted. Most metastatic invasions occur in the regional lymph nodes, then the liver and the peritoneal surfaces. Then, in order of frequency, come the distant lymph nodes, the pancreas and the lungs. Less than 10 per cent metastasize to the lungs. Bone metastasis occurs more frequently than usually indicated by other authors. Bone metastases are usually of the destructive type and are probably of hematogenous origin.

In the differential diagnosis, the examiner must bear in mind the various deformities produced by extrinsic disease such as tumors of the spleen and pancreas, large gallbladder pressing against the duodenum or pylorus and occasionally pressure of the splenic flexure of the colon. Again, there are numerous conditions within the gastric lumen which may simulate cancer. Large food particles or exaggerated mucosal folds along the greater curvature may produce deformity. Careful palpation will usually disclose the nature of these folds. A large food particle causing a defect in gastric contour can be moved by palpation into various parts of the stomach.

Phytobezoar and trichobezoar are rare. The food



Fig. 5. Fungating type of carcinoma involving the pyloric antrum but not sufficiently advanced to produce obstruction.



Fig. 6. Fairly extensive carcinoma of median and pyloric portions without obstruction.

ball usually floats on the barium suspension. The hair ball is heavier and generally sinks in the suspension. Either can easily be moved by palpation. Nonmalignant tumors are characterized by lack of involvement of the gastric walls. Polyps occur occasionally but do not interfere with normal peristaltic action. They may cause severe clinical signs through bleeding and indigestion.

Sarcoma of the stomach is quite rare and cannot be distinguished from carcinoma. Their actions are quite similar. Sarcoma may occur in youth as well as in middle age. Gastric tuberculosis is very rare. It, too, simulates carcinoma in roentgen ray examination. Here clinical criteria are quite important. Syphilis is rare but may produce any of the roentgen ray signs seen in cancer. Infiltration of the gastric walls may produce filling defects and gastric deformity. The gumma simulates a tumor. Diagnosis must depend on changes in the blood and spinal fluid.

Treatment is essentially surgical. It is often combined with radiation either preoperative or postoperative, or both. Recently, Kaplan and Goldfeder<sup>14</sup> developed a serum which offers great promise. While this serum is not yet a cure it apparently inhibits cancer growth and increases the effect of roentgen ray and radium when used in conjunction with the serum.

It is hoped that the general practitioner may be stimulated to more careful investigation of those patients who persistently complain of indigestion, especially those of the older age groups. Any patient in this group who has achlorhydria and in which pernicious anemia and gallbladder disease can be ruled out should be the object of persistent search for possible gastric malignancy.

In the main, the lay public is "stomach conscious" as evidenced by the large sales of advertised digestive remedies. Undoubtedly much harm has been done by the widespread use of these nostrums. It is to be hoped that the average physician will become equally "stomach conscious" so that earlier



diagnoses can be made thereby cutting down the high death rate which now exists.

#### SUMMARY

1. Attention has been called to the facts and figures relative to gastric cancer.
2. Usual clinical criteria are actual indications of advanced malignancy and not of early cancer.
3. Gastric malignancy produces changes which can be discovered comparatively early by fluoroscopic and radiographic examination.
4. It is hoped that this article may stimulate closer cooperation between the physician, surgeon and roentgenologist in the investigation leading to earlier diagnosis of gastric cancer.

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During October, November and December, 1937, Herman Finkelstein, West Orange, N. J. (*Journal A. M. A.*, July 2, 1938), performed routine spinal punctures on practically all patients with mumps admitted to the Willard Parker Hospital with the exception of adult patients and patients with mumps that occurred simultaneously with some other disease. About forty patients had spinal punctures done as soon after admission as was feasible. A complete physical and neurologic examination preceded the spinal puncture. Sixteen cases in which abnormal spinal fluids were found are being reported. They were divided into three groups: group A, severe; group B, mild, and group C, symptom free. The four patients in group A, at some time during the first week of their illness, had severe clinical signs and symptoms of involvement of the central nervous system. These patients presented extreme drowsiness, severe headache, malaise, fever and vomiting. They sometimes presented abnormal neurologic signs. The symptoms persisted for several days, the lethargy lasting from three days to a week. Headache persisted for from four to five days. Sedatives were resorted to, since spinal punctures did not relieve the patients of their headaches. The six patients in group B had mild symptoms, including slight headache, listlessness, anorexia and slight fever. These symptoms were so mild and of such short duration that, under ordinary circumstances one would not consider the diagnosis of meningo-encephalitis nor would one resort to a lumbar puncture for diagnosis. The symptoms did not last for more than a few hours and were not severe enough to require sedation. The six cases in group C did not present any sign or symptom clinically which would even suggest the possibility of meningo-encephalitis.

## A PRACTICAL METHOD OF BLOOD TRANSFUSION IN THE HOME

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The giving of blood in the form of transfusions had been done prior to the beginning of the twentieth century, but it was not until 1901 that the reason was learned why some transfusions were successful and others terminated with severe reactions and even death.

Landesteiner is given credit for having observed in 1901 that the blood serum of normal individuals contained iso-agglutinins, and by further examination found that blood could be divided into three groups. A fourth and rare group was described by Decostello and Sturli.

Upon this knowledge of blood grouping and typing has been built the method of successful transfusions as we know them today. The World War gave a tremendous impetus to transfusions. Today they are no longer looked upon as a heroic last resort but rather as a logical, safe and rational therapeutic procedure when indicated.

Briefly, the indications for transfusions are: (1) Treatment of shock in hemorrhage, (2) secondary anemias, and (3) certain acute infectious diseases. Any one or a combination of any of the above conditions may be taken as a sufficient reason for transfusion.

Before proceeding any further, let me state that fundamentally the operation of blood transfusion is one to be undertaken in the hospital when possible. But there are occasions in the treatment of patients in the home—and I believe every general practitioner will concur with me in this statement—when it is evident that blood transfusion is not only desirable but may, indeed, be life saving. Yet, because of various reasons, hospitalization may be impractical or even impossible.

It is for such instances as these that this method is presented. This method and the apparatus used are not original with me, and it goes without further explanation that its use is not limited to the home alone; it is eminently suited to the hospital also.

For the sake of clarification I have divided the operation of transfusion into three phases: (1) The preparatory or pretransfusion stage, (2) the actual transfusion, and (3) the postoperative or posttransfusion stage. It is the first two stages which have always offered the greatest difficulties in the performance of this valuable therapeutic procedure so it is to these two phases that we shall devote most of our attention.

The pretransfusion phase consists chiefly of securing compatible donors. To do this, the blood of the donor must be matched with the blood of the patient, or recipient. From 5 to 10 cc. of blood are withdrawn from the recipient's vein; one or two drops are placed in a small sedimentation tube

Read at the meeting of the Southeast Missouri Medical Association, Farmington, October 13, 1937.

of saline and the remainder is placed in a centrifuge tube. The same procedure is duplicated with each of the prospective donors. The saline suspension of cells is set aside; the remainder of the blood is centrifuged for about ten minutes until the serum is clearly separated from the cells. We are now ready for the actual cross matching.

With a small pipette a drop of the recipient's serum is placed on one end of an ordinary microscope slide which has been previously divided in half by a crayon mark perpendicular to the long axis of the slide. Place one drop of the saline cell suspension of the donor with the recipient's serum on the slide, mix gently, agitating with the end of the pipette. Similarly, the donor's serum is mixed with the recipient's cells on the other half of the slide and a cover slip is placed over each preparation. Hanging drop slides are not necessary, nor is it necessary to rim the edge of the slide with vaseline; it will seal itself without that. The preparation should be examined immediately under low power of the microscope and every five or ten minutes thereafter for at least forty minutes before passing on the donor as compatible. Very often on the first examination the cells of either or both sides of the slide will be seen to have clumped together in minute clusters; then that donor can immediately be disregarded without further examination.

To be compatible, the suspensions on both sides of the slide should be smooth, free of clumps for at least forty minutes. Thinning of the suspension, which indicates hemolysis, also disqualifies that specimen of blood. It is important that the centrifuge tubes, the saline cell suspension tubes and the slides be marked with identifying numbers from the very start. This is simply and efficiently done with an ordinary crayon pencil. Each donor's name should be recorded on a paper with the corresponding number of his specimen of blood, and at the end of the examination should be clearly marked "compatible" or "incompatible." This record should be kept for future reference. If more than one compatible donor is secured the one with the largest veins should be selected and the other kept in readiness for future need. It is not necessary that the recipient and donors be typed first, although this can be done; and it sometimes saves a lot of work by immediately eliminating certain prospective donors.

The second stage or the actual transfusion is even more simple than the matching. The donor is placed on a cot or bench parallel to the recipient and close enough so that out-stretched arms of both will be closely approximated. The apparatus used effects a closed circuit so that sterile drapes and sterile gloves, while preferable, are not necessary. Freshly laundered towels will suffice. The operator's hands thoroughly scrubbed are quite adequate without the use of gloves. The skin over the site of operation is prepared as desirable for any surgical procedure. The use of a small amount of novocain in the skin

over the vein will render the procedure practically painless. If a reaction is to occur, it will do so during the transferring of the first 100 cc. of blood.

The third or postoperative stage offers little difficulty. The patient should be observed for at least an hour following the transfusion. Adrenalin with or followed by morphia will usually suffice to control any posttransfusion reaction.

In conclusion, we feel that the following statements are evident:

1. A blood transfusion should not be regarded as a heroic last resort.
2. It is primarily a hospital procedure.
3. There are, however, occasions when hospitalization is impractical or impossible, but when transfusion is definitely indicated.
4. We believe that the procedure outlined is practical, safe and efficient.

It is not original. The apparatus has become very popular in the last few years in and around Memphis. It is used by many doctors in the hospitals and in the homes. We do not believe it practical for transfusion of the blood of infants.

The method of cross matching blood that has been outlined has been used at the Memphis General Hospital for many years. As an intern there, I have matched blood for innumerable transfusions. Any physician or technician with a microscope and a centrifuge may use this method and with a little practice become proficient in it.

Since procuring the Louis Jubé syringe, I have had occasion to use it on only one patient. I gave this patient four transfusions, one of 400 cc., one of 450 cc. and two of 500 cc. In this instance I considered it as a life saver. The syringe is not fool-proof. It is comparatively inexpensive.

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#### THE CARE AND TREATMENT OF CEREBRAL PALSIES

Winthrop Morgan Phelps, Baltimore (Journal A. M. A., July 2, 1938), states that the care of cerebral spastic paralysis is a general problem in which the orthopedic aspect is the biggest single factor, but orthopedic measures alone will not in many instances accomplish the desired results. The problem deals with a deviation from the normal which has existed since birth in most instances. The general care of the spastic and of the athetoid patient and of the patient with any other type of cerebral palsy is complicated. There must be a program correlated by the orthopedist, the pediatrician, the neurologist, the physical therapist and the speech expert for the motor side and by teachers accustomed to handling the problems of the handicapped on the educational side, and psychologic aid is necessary in adjusting these children and their behavior to the world at large. Physical therapy in the primary stages of the condition should be followed by occupational therapy when the primary motions can be performed and grouped. This should give way to vocational training when the patient is old enough to determine the line in which he is to be trained. The program constitutes an effort to parallel the mental education of the normal child with a program for physical reeducation which for the normal child is to a great extent automatic.



## THE FUTURE OF THYROID SURGERY

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ST. LOUIS

Albucasis, the Arabian surgeon, is said to have performed the first thyroid operation one thousand years ago, since which early period a highly honorable record has been achieved in a field of surgery where almost miraculous results are common. The salient facts of this vast fund of accumulated knowledge are so widely recognized that I need do no more than comment on a few additional experiences of our own before attempting to visualize and portray future developments in this branch of surgery.

The background for our sometimes bad results, which are gradually decreasing during the last quarter of a century, may be visualized partially in two attitudes; namely, that of the patient who is stimulated when thyrotoxic and that of the doctor who is unfortunately complacent, hence surgeons get these invalids late. We, ourselves, find that for the year 1930 of our general surgery 42 per cent was referred by consultants whereas only 40 per cent of our goiters came to us in this way, tending to prove the second at least of the two statements. Three characteristic examples of neglect follow: Mrs. T. who, after five years of treatment for an enormous unilateral adenoma that was choking her, was found after operation to have a small cancer buried in the middle of it. Mrs. F. came to us after five thyrotoxic attacks during a period of six years weighing 64 pounds when her normal weight had been 115; she died in the hospital before any rehabilitation was possible. Mrs. K. was sent to us with an enormous left solitary adenoma of slow growth which had become gangrenous and though her life was saved by surgery she endured a very long hospital stay and her neck was somewhat disfigured.

In the background of my predictions for the future may be mentioned the only two patients I have ever seen recover spontaneously for a period of years after profound thyrotoxicosis. I ligated one upper pole on Miss B. and years later removed one lobe of her husband's thyroid. Neither of these operations alone could have cured them, still I know they remained well some years but since they have not reappeared for several further years possibly both of them are suffering again or even in their graves.

We have today, all of us, finally been forced by bitter experience to stop operating at all in the acute stage of thyrotoxicosis with the hope of effecting a sudden cure, having now learned that prevention only of future attacks can be effected by operation done in a temporary intermission hastened by rest, sedation and iodine.

In the light of this knowledge certain statistics formulated in our practice are to be explained.

During the five years, 1926 to 1930 inclusive, of our thyrotoxic patients who died in the hospital 38 per cent died before operation could be performed. During that period we gradually learned to let the "hot" ones alone to the end that in the years 1931 to 1935, inclusive, 65 per cent of those we lost died before operation; the operative mortality rate was 1.6 per cent. During the epoch just referred to and the years which have elapsed since that time we have gradually formulated our criteria by which patients are chosen for operation, also a list of absolute contraindications which underlie a satisfactory surgical experience, one which guides us in predicting the future of thyroid surgery.

The criteria referred to, which certainly represent the minimum necessary considerations involved, concern circulation, excretion, nutrition, self control, basal metabolism and "duration of voluntary apnea" (to be further elucidated). The absolute operative contraindications, no one of which alone can be disregarded with safety, are congestive failure, nitrogen retention, vomiting, diarrhea, rapidly decreasing weight, diagnosable malignancy, a maniacal state, rising basal metabolic rate and voluntary apnea of less than 20 seconds for the expiratory phase. The details of our voluntary apnea test and its clinical application are presented in great detail by Willard Bartlett, Jr.,<sup>1</sup> in a recent article devoted to the study of thyrotoxicosis. Briefly, one must say that the average, healthy individual can hold his breath after forced inspiration approximately 60 seconds and after forced expiration about 30 seconds, giving a normal ratio of something like 2:1. On the other hand, a highly toxic goiter patient has been known by us to hold her breath only 5 seconds following either inspiration or expiration. It is at once apparent that such a patient presents two impressive errors, one in the length of time she can hold her breath, the other in the disturbance of the normal ratio which becomes 1:1 instead of 2:1.

### PREDICTIONS

1. It is safely predictable that the operative mortality in future will be well under 1 per cent if the above well known criteria are studied and contraindications observed, having particular reference to duration of voluntary apnea as a useful physical test of a patient's ability to stand operation; eleven further predictions seem justified in view of what we know today.

2. Earlier operative treatment than now current is in sight since it may, I think, be safely predicted that the better trained future physician will recognize the danger of procrastination with such a patient. His vanishing complacency, by the same token, should protect the patient from the errors now arising from her own stimulation.

3. With complete understanding of the terms curative and preventive in the treatment of acute toxic goiter it may be safely said, as far as we now know, that adequate removal of thyroid tissue will

<sup>1</sup>Presented to St. Louis City Hospital House Staff, December 16, 1937.

furnish the best assurance of perfect future health in a patient of this sort. We must contemplate a really subtotal thyroidectomy and feed thyroid substance post-operatively else there will be no complete interruption of toxic symptoms but continued growth of thyroid tissue, hence the term recurrence is unjustified in this connection. Pathological tissue has been overlooked by operators in three sites; viz., on the opposite side, at the upper pole and in retrotracheal extension of the gland.

4. Subtotal thyroidectomy will, I am sure, be the future treatment too of nodular goiters whether toxic or not on account of circulatory complications to be feared in a large percentage and malignancy to be definitely expected in a small percentage of them.

5. We may be compelled rarely to perform lobectomy in the highly intractable case and then complete the work at a future sitting, with no permanent benefit until the second lobe is out.

6. We can no longer justify any other than direct attack on thyroid tissue since ligations, injections or radiation—all have been tried and found wanting.

7. We shall no longer perform cervical sympathectomies in the hope of influencing the gland through its nerve supply.

8. No second surgeon, it seems, will ever be able to repeat the results claimed by the distinguished author who described various adrenal operations calculated to influence the related thyroid.

9. The future is not bright so far as thyroidectomy for cardiac decompensation is concerned; this procedure has been given up except in rare instances by practically all the operators who once favored it, if the literature is to be believed.

10. One can safely predict that determination of high blood cholesterol will in future prevent thyroidectomies for other than mechanical factors on hypothyroid individuals who present goiters. This diagnostic aid is stressed because there is a superficial resemblance, in many instances, between the nervous and vascular expressions of hypothyroidism and hyperthyroidism.

11. More accurate diagnosis of early toxic goiter, often substantiated by the finding of low blood amylase is bound to help prevent the future removal of symptomless goiters from patients suffering from the various asthenias. For particulars the reader is referred to Willard Bartlett, Jr.<sup>2</sup>

12. In so-called recurrent cases blood calcium and phosphorus must be determined before operation is done in the attempt to prevent parathyroid destruction because the patient may be living already on a low tetany level, it being assumed, of course, that two invasions of this field are more prone than is a single one to destroy the glandules or to interfere with their blood supply. In recent years we have noted tetany in secondary thyroidectomies only, hence the point is stressed.

One is safe in many of the above predictions which represent the current practice of many of us,

but a study of the subject involves so many elusive factors that it impels to flights of fancy, which may or may not in part be justified.

Speculation as to the future preventive treatment of thyrotoxicosis inclines one to protect as far as possible those predisposed individuals who belong to the type described by Warthin<sup>3</sup> as particularly likely to develop thyrotoxicosis.

A passing suggestion for the very distant future may be found in the perusal of many case histories which discloses, we believe, that a period of primary hypothyroidism has in many instances antedated in our own experience<sup>1</sup> an onset of violent thyrotoxicosis. Preventive treatment or management might not be amiss with such patients in whom the malady is predictable.

It is quite within the range of future possibility that some experimenter will discover a method of precipitating the remission in toxic goiter so that the patient may safely be operated on without the long delay which is sometimes incurred at the present time. We have been experimenting for years with opium and other drugs in an attempt to imitate in a measure some phases of hypothyroidism, at least to induce quickly a condition representing the more or less complete antithesis of thyrotoxicosis. Our results have not been wholly satisfactory but a solution of the problem may be just around the corner.

A much more ambitious dream would contemplate the correction of thyroid imbalance (without surgery) by playing upon endocrine interdependence; possibly some future penetrating study of the thyrotropic hormone of the pituitary may suggest a control of the thyrotoxic patient from this avenue of approach although up to date no constant results have rewarded the efforts of the endocrinologists.

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#### POLIOMYELITIS VIRUS IN HUMAN STOOLS

James D. Trask, A. J. Vignec and John R. Paul, New Haven, Conn. (*Journal A. M. A.*, July 2, 1938), record their experiences in testing material from the intestinal tract and nasopharynx during a small epidemic of poliomyelitis which occurred in 1937. They describe (1) three cases of mild abortive poliomyelitis in each of which the virus was recovered once from the nasopharynx and (2) another case of a similar type of illness in which the virus was repeatedly recovered from the stools. They believe that the significance of the latter finding lies not so much in the confirmation of the now established fact that poliomyelitis may escape from the human body by the intestinal route as in the type of case which yielded the virus from this site. The attacks in all cases which yielded the virus were mild and nonparalytic. It is probable that some of the attacks might not have been regarded as examples of poliomyelitis without the finding of the virus.



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AUGUST, 1938

## EDITORIALS

### WHAT OF THE MENTALLY ILL?

As science has slowly and painfully progressed along the pathway to a clearer and more sane appreciation of the provocation and types of mental illness, this progress has been marked by the discovery that mental illness was not a visitation of divine wrath, that the sufferer was not possessed of a devil, was not a witch nor bewitched, that lunar changes that had long been considered the cause of mental distempers were entirely innocent of any part in their provocation, and finally that mental illness was a disease responding in many cases to curative effort.

The history of the early care of mental sufferers constitutes one of the greatest blots on the history of our civilization. From dungeons of filth and chains in which they were thrown to be treated like beasts or worse than beasts they passed through a period of scourging. They were beaten and bruised and in some instances burned at the stake or hung as witches. Later they passed through the ordeal of bleeding, purging and the other crude methods of therapy that were the accepted routine of their day. From madmen they became lunatics, mad-houses became lunatic asylums as the word asylum sounded more euphonious and soothed the conscience of those who sincerely sought but one end, the protection of society from the vagaries or possible violence of the afflicted individuals' acts. For nearly half a century after these disorders were clearly recognized as diseases and the names of the institutions changed from asylums to hospitals no sincere interest on the part of the public was evinced in the fate of the mental sufferer. Public concern continued to be centered in his complete segregation that society might be protected from the real or imagined menace of his presence with little thought of the ultimate outcome of his illness.

Our institutions continued under the new title of hospitals without facilities for treatment or research but functioned as custodial institutions offering domiciliary care only, on an almshouse basis. Then through the last quarter of the century public interest awoke, institutions began to take on the ap-

pearance of hospitals, a standard of requirement was established relating to professional and nursing service, facilities were expanded and necessary equipment for carrying on modern methods of treatment in conformity with standards established were mobilized; but with this mobilization there still remained the almshouse atmosphere because of inadequate appropriations to properly carry on curative effort.

In the more advanced states the dominating influence of partisan politics, for years the most sinister barrier to institutional progress, has grudgingly retreated in the face of an increasing public demand for more scientific medical care and more efficient administrative policies. For years the struggle to secure a better understanding of the complex mechanism of human minds in order that an effective means of combating mental disease might be developed was carried on with just sufficient success to save research workers from utter discouragement.

Slow and painful as the evolution of our understanding and treatment of mental maladies has been in the face of many discouragements, chief of which was public apathy, it has made and is making definite and substantial progress. It is progress in a degree that promises hope of complete recovery in many types of mental illness that a few years ago would have been regarded as hopelessly incurable, hope for those who stood on the threshold of life and suddenly found its glorious prospects blighted and themselves condemned to a living death, hope for those who presented problems of conduct and personality that without recognition would almost inevitably lead to mental invalidism and dependency.

But the public attitude during this period of slow evolution has not changed toward the mental hospital and toward those whose efforts have been directed to the care and relief of these unfortunate sufferers. Public enlightenment has not kept pace with the advances made and to the rank and file our hospitals are still asylums, places that are shunned and looked upon with aversion. The medieval term such as asylum defined by Webster as "a sanctuary or place of refuge and protection where criminals and debtors found shelter and from which they could not be forcibly taken without sacrilege," is still in use and the mental sufferer is still frequently referred to as a lunatic, a term having its origin almost in the dark ages when mental illness was supposed to be controlled by lunar influences.

The mental sufferer is not treated as one suffering from an illness but as a malefactor. The whole procedure of commitment takes on an air of semicriminality. He is haled into court that the nature of his illness may be determined by an agency usually entirely incompetent to pass judgment in the matter. No group of laymen could have the temerity to consider themselves qualified to diagnose cancer, tuberculosis or appendicitis, purely

specific clinical conditions, yet they are given full authority to attach the stigma which unfortunately still continues to be attached to a mental illness and are regarded as competent to pass upon the more intricate and subtle processes of the mind, thereby adding embarrassment and humiliation to the patient, the family and friends. If found "guilty" of insanity, the patient is conveyed usually under armed guard like a criminal to a mental hospital or as they still choose to call it, the asylum. The distress of the patient and his family is given publicity in every way and they are denied the solace of sympathy because of the humiliation felt as a result of this procedure.

It is beyond understanding how in the last century of progress an invaliding condition that annually cost the nation three fourths of a billion dollars can be viewed with such public apathy. A glimmer of hope is inspired by articles appearing in some of our leading magazines during the last year calling attention to both our public and professional dereliction.

The public has been more discerning than the medical profession in noting the menace of mental disorders and its progressive increase during the years. Well meant but sometimes bungling efforts to correct the condition through the efforts of laymen and social agencies have been undertaken. These have brought forth criticism on the part of the medical profession yet so long as medical men ignore the challenge of mental disease they have little ground for criticism of the laymen and social agencies who become interested in their prevention and cure. They at least recognize and are attempting to correct conditions that should be but in the past have not been the concern of the medical profession; and when the medical profession broadens its vision to the point that it recognizes that it must treat the whole individual rather than his liver, his lungs or his stomach, we will have less sectarian medicine which in most instances is synonymous with quackery and will frequently find that an understanding of the individual may be of greater value in his successful treatment than a knowledge of physical pathology or the potency of the medicines prescribed.

The marked awakening of interest in mental illness by the recent encouraging results obtained in the pharmacologic treatment of these conditions will bring them more clearly within the purview of the general practitioner, and the broadening of the field of medical endeavor to include the mind as well as the body in the ministration of the general practitioner will disperse the long cherished dictum that the body and mind are separate entities.

### INSANITY NOT INCREASING

The number of persons living in institutions for the insane is greater today than at any other period in the history of the country. It does not follow, however, that the incidence of insanity is increas-

ing. The number of institutionalized persons in this country increased from 235,000 in 1923 to 319,000 in 1932. The only conclusion permitted by the figures is that 84,000 more persons occupied beds in these institutions at the later than at the earlier date.

Persons confined to asylums may be roughly classified as having infectious (syphilitic), constitutional (psychotic) or degenerative (arteriosclerotic) diseases of the brain. During the decade ending in 1932 better educated physicians recognized more cases of insanity. During the same period there was a 24 per cent increase in the capacity of the hospitals devoted to the care of the insane. Diagnosis was made earlier. Facilities for custodial care were greater. The statistics superficially considered point to a greater incidence of these diseases. Sentimentalists blame worry, the depression and the pace of occidental living for the increase. For proof of their thesis they might point to the increasing incidence of certain organic diseases in Negroes. This is thought to arise out of the greater nervous tension developed by urban as compared with pastoral living. They might negligently assume that similar circumstances have contributed to the undoing of the white man. They might even seek for the country as a whole to return to the tranquil rustic pursuits of prerevolutionary days.

Analysis of the facts will reveal that the increase of insanity in this country in the last several years has been apparent rather than real. During the period under consideration the expectation of life at birth increased. For white persons the increase was more than three years<sup>1</sup> between 1923 and 1930; for Negro males over five years and for Negro females over seven years. We have no figures regarding the incidence of syphilitic brain diseases requiring institutionalization in the period under consideration. It is a reasonable presumption, however, that there has been no decrease in the frequency of paresis and the related diseases. The psychoses are preeminently affections of the young and middle aged adult. The number of such person in the general population has increased during this period.

Finally, there is the great group of senile dementia patients, largely caused by cerebral arteriosclerosis. At ages over 60 Wartman<sup>2</sup> found 90 per cent of the men and 85 per cent of the women so affected. In an earlier era such persons were usually cared for at home or in county poor farms. Today they are more commonly committed for custodial care. They, like all other members of the asylum population, live longer.

Jacob<sup>3</sup> has studied the alleged increase in insanity for the decade ending in 1932. He offers a statistical analysis of the asylum population of the states of Georgia, Alabama, Illinois and of the United States with reference to persons over the

1. Dublin, L. I., and Lotka, A. J.: *Length of Life*, New York, Ronald Press, 1936.

2. Wartman, W. B.: Arteriosclerosis in 500 Autopsies, *Am. J. Med. Sc.* 186:27, 1933.

3. Jacob, J. S.: A Note on the Alleged Increase in Insanity, *J. Abnorm. & Social Psychol.* 33:390, 1938.



age of 15 years. In these three states and in the country as a whole the increase in the institutionalized population varies from 27 to 51 per cent. But there has been an increase in institutional capacity varying between 24 and 28 per cent. There has been an increase in the median duration of residence within the institution prior to death varying from 1 to 110 per cent. The number of first admissions to the asylums per 100,000 general population has varied between a decrease of 31 per cent and an increase of 12 per cent. Since patients are generally hospitalized for longer periods now than formerly, and perhaps because therapeutic methods are more successful, the rate of readmissions is in general low. It actually diminished by 40 per cent in Georgia. Hence, interpreted from the larger perspective of the factors that contribute to the census of the insane there has been no striking increase in the number of such persons in this country for the decade ending in 1932.

A more significant part of Jacob's paper has to do with the need for additional hospital facilities. Of the political subdivisions studied only Illinois has an asylum capacity equal to the demand for beds. Georgia has a 20 per cent deficiency in bed capacity. The country as a whole has a 10 per cent deficiency. More beds are required. They are not needed to meet the increase in the number of mentally irresponsible persons; they are needed to meet the normal requirement of facilities to care for the insane. In Missouri we have grown accustomed to the spectacle of overcrowded asylums. It may be hoped that there will be additions to the recent building activities directed toward the housing of the insane. Perhaps we are ready to admit that a certain proportion of the population will develop mental disturbances. Perhaps we are ready to provide for them the institutional care which their condition and our obligation toward them demand.

Finally, we quote from the conclusion of Jacob; we hope that it may evoke a realistic conception of the problem posed by insanity in this country. "Thus it seems," he writes, "that on the basis of the present data, no conclusive evidence appears concerning the alleged increase in the incidence of insanity; rather, it seems evident that the increase in the population of the state hospitals studied is due, in part at least, to the increased capacity of the hospitals, the increased rate of readmissions, the lowered rates of discharge and of death, and the increased duration of residence prior to death." He offers a study which may profitably be read by any person concerned with the care of the insane, or by any person concerned with cleemosynary problems.

#### TRICHINIASIS: A PUBLIC HEALTH PROBLEM

The ingestion of undercooked, infested pork is responsible for human trichiniasis. The disease is rarely diagnosed although the mortality rate varies

up to 16 per cent. Until the last decade trichiniasis was considered uncommon. During that period cadaver examination has proved that it affects approximately one fifth<sup>1</sup> of the residents of the United States. It is seemingly rare in Denmark. It has been found in all areas of this country and in all economic classes. It is responsible for illness incapacitating for from two to eight weeks, depending upon the extent of the infestation.

The eradication of the disease may be accomplished by the destruction of all infested rats which serve as hosts during one phase of the natural life cycle of the parasite. This promises to be difficult of accomplishment. It is not necessary to destroy infested hogs. But the meat from such animals should be diverted immediately by the packing house into canned or pickled products. Since thorough cooking destroys the larvae this method of preparation will protect the packer from loss at the same time that it protects the general population from infestation. The difficulty lies in the detection of the infested swine.

Macroscopic inspection of the muscles of the animal cannot be depended upon to disclose the trichinae. However, Bachman's simple test<sup>2</sup> requiring only thirty minutes for its application may be utilized to single out those animals whose meat should not be sold in the raw state. The intracutaneous injection of a 1 to 10,000 dilution of trichinella antigen offers a rapid and dependable method of detecting those animals harboring the organism. It would seem probable that a slight alteration in packing house technic could include this diagnostic test as part of the routine leading to the butcher's knife.

It would seem difficult if not impossible to educate the general public against the consumption of raw pork. Even if packing houses included the skin test for trichiniasis on all animals to be butchered, there would still be innumerable cases of human infestation arising from the consumption of hogs butchered in small abattoirs or at home. It is by no means likely that the eradication of the disease will ever become an actuality. It must still be searched for in the explanation of obscure gastrointestinal disturbances and of unexplained fevers. The latter may be of the typhoid type. Eosinophilia and slight leukocytosis are almost invariable findings. But they are not conclusive.

A skin test similar to that employed on hogs may be used on man. A 1 to 10,000 dilution of the antigen rarely gives false positives although more concentrated preparations give them not infrequently. Within from three to five minutes following the injection of the test substance localized blanching and wheal formation appear. This is followed by all the usual manifestations of a positive skin reaction. The great value of this test lies in the fact that it reaches its maximum within one hour.

1. Scheffley, C. H.: The Prevalence of Trichinosis, *Am. J. Hyg.* 27:142, 1938.

2. Augustine, D. L., and Theiler, H.: Tests in Diagnosing Trichinosis, *Parasitology* 24:60, 1932.

Early diagnosis is important to the patient for the sooner it is made the sooner the intestinal tract may be emptied of the residual parasites. Obviously only symptomatic treatment is of value after the stage of encystment.

The skin test becomes positive in human beings sixteen or seventeen days after the ingestion of infested meat. In the hog it becomes positive within eleven days. In either species false positives are practically unknown. Occasionally an infested person gives a negative skin reaction. In Boston, Spink and Augustine<sup>3</sup> obtained a positive test in thirty-three out of thirty-four proved cases. The single failure occurred in a moribund patient.

Wider application of the skin test for trichiniasis in the presence of unexplained fever or gastrointestinal symptoms will uncover many hitherto unsuspected cases. Inasmuch as from four to seven days elapse after the ingestion of the larvae before the invasion of the body begins, the test may be applied a week to ten days after the first appearance of the unexplained symptoms. Each discovered case might well serve as the stimulus to further educate the persons residing in the community against the consumption of raw pork. The local publication of such objective evidence may be expected to go farther toward the eventual eradication of this disabling disease than any amount of didactic instruction. Perhaps, in time, slaughter house proprietors may be impressed by the service they may render the community if they institute the skin test on all hogs intended for human consumption. They must understand that a positive test does not mean the destruction of the animal. It merely serves as warning that all meat from that animal must be thoroughly cooked in the packing plant before it is offered for human consumption. In this manner the public health problem offered by trichiniasis may be largely solved.

### THE PREVENTION OF TETANUS

Tetanus spores are widespread. They are frequently found in city streets although the motor car has long since replaced the horse. The intestine of the horse and other animals usually harbors these germs. They may be ingested with impunity, either by man or animal. Should injury implant them under the skin tetanus and frequently death results. Following injury about the head or face symptoms become manifest in from three to fourteen days. At sites further removed from the brain symptoms do not appear for from four to five weeks. Protective substances are not found in the serum of normal persons nor in the serum of persons who have recovered from the disease.

For many years a protective dose of tetanus antitoxin has been administered to injured persons suspected of having the germ as a wound contami-

nant. Fatalities have been rare. In general this passive immunity suffices to prevent the development of the disease. Nevertheless public health workers have long desired a method of active immunization. Such a method should prove a special boon to persons allergic to horse serum. The successful eradication of diphtheria by the injection of toxin-antitoxin or of alum-precipitated toxoid has spurred the search. Five years have elapsed since the introduction of tetanus toxoid to generate an active immunity to the disease. This period has not been long enough to determine the merit of the method.

Tetanus is a rare disease. Patients sometimes refuse antitoxin after running the barn yard pitch fork through an extremity. Strangely enough most of them escape the disease altogether. Theoretically conditions favored its appearance. More rarely the disease develops even after the injection of antitoxin. In these instances it is presumed that the passive immunity has worn off. For this reason prudence demands a second injection of antitoxin from eight to ten days after the first in severely contaminated wounds.

Certain groups within the general population are notably exposed to tetanus infection. Among them are farmers, lumbermen, miners and other persons whose occupation connects them intimately with the soil. In time of war soldiers are particularly prone to infection. Children are frequently injured in the course of play. A protective injection of tetanus antitoxin is often given them following such injuries.

Antitoxin, unfortunately, is prepared from the serum of horses. Foreign protein forms an unavoidable contaminant of such solutions. It may induce reaction. The least alarming is serum sickness a week or ten days later. Of greater importance is the production of a permanent allergic state. The latter demands special consideration in the event that later injections of horse serum are required. Rarely cardiovascular collapse and syncope follow upon the injection of such sera into sensitized persons. For this reason skin or ophthalmic tests for sensitivity form an important part of the preserum routine.

These and other considerations led to the search for potent agents capable of inducing active immunity against tetanus. Clinical tests reveal an amazing inconsistency of action of the perfected toxoid. Except for occasional slight local irritation the injection of the new substance has been without reaction. It contains no horse serum. Partially satisfactory immunization has been produced.

Bergey and Estris<sup>1</sup> observed slight antitoxin production in human beings given alum-precipitated tetanus toxoid from three to six weeks earlier. This was distinctly contrary to their experience with guinea pigs. In the small animal a single injection

3. Spink, W. W., and Augustine, D. L.: *Diagnosis of Trichinosis*. J. A. M. A. **104**:1801, 1935.

1. Bergey, D. H., and Estris, S.: *Immunization of Humans With Alum Precipitated Tetanus Toxoid*, Am. J. Pub. Health **34**:582, 1934.



of toxoid produced a concentration of at least one half unit of antitoxin per cubic centimeter of serum in eight weeks. These investigators believed that 1/250 unit would be produced in man over a period of six months. Their data do not prove the assumption. Their patients were not exposed to contamination by tetanus organisms. Their paper is speculative rather than conclusive.

Cowles<sup>2</sup> of the Yale Medical School Department of Immunology immunized guinea pigs with toxoid. Later he injected tetanus spores in a solution of calcium chloride (tissue irritant). Even his control animals did not always die following such massive infection. Some of the protected animals developed the disease. The outcome was apparently unrelated to the antitoxin titer of the blood. For example, an animal with an antitoxin titer of 1/50 unit was symptom free. An animal with an antibody titer of one unit developed tetanus. In a small group of human beings two injections of toxoid eleven weeks apart resulted in an antibody titer varying between 1/40 and 2 units eight weeks later. Most of them showed a titer of from 1/5 to 1/10 unit. Eight months later the titer varied between 1/50 and 1/20 unit. A "reactive" injection of toxoid was then administered. The titer following this third injection reached a maximum of 20 units in ten days. It was usually 1/10 unit (the protective requirement) by the fifth day. It is to be remembered that the latter antitoxin concentration is generally considered necessary to prevent tetanus. It is by no means certain that every person will develop this concentration even by the seventh day.

Cowles' results force the conclusion that in injuries about the head with an attendant short incubation period antitoxin should be injected regardless of previous immunization. After wounds to other parts of the body resort may be had to a third injection of toxoid. Gold's<sup>3</sup> recent paper leads to a similar conclusion.

The last named investigator determined antitoxin titer for several months after two injections of 0.5 cc. toxoid administered from twenty-one to twenty-four months apart. Contrary to most investigators he found a low concentration of antitoxin in untreated humans. The first injection produced no appreciable increase in titer. By the fourteenth day after the second injection his subjects' titer exceeded the protective requirement. The duration of this high titer was variable. In one case it reached 3 units per cubic centimeter after fifteen months and was 2 units after twenty-two months. In most instances it had declined to less than 1/10 unit at the end of six months. To some subjects Gold gave a third or "reactive" dose of antitoxin ten months after the second. His findings are similar to those of Cowles. The titer necessary for protection was always achieved by the fourteenth day but not

always by the seventh. The duration of this immunity was likewise variable.

Definite conclusions cannot be drawn from the present knowledge accumulated on tetanus toxoid. The necessity for a third or "reactive" dose following an injury likely to be contaminated with tetanus spores is clear. Whether immunity will develop with sufficient promptness following head injuries is still open to question. For the present it would be wise to inject antitoxin after such injuries. Since a "reactive" injection of toxoid is required for injuries elsewhere the advantage of the method lies solely in the fact that sensitization to horse serum may be avoided. Should contamination mistakenly be thought not to have occurred the elaboration of toxin by the tetanus bacillus will not lead to antibody production.

There is uncertainty as to the degree of protection afforded by tetanus toxoid. Another question arises in connection with its employment for children. Recently there has been an increasing use of antigenic substances intended to enhance their immunity. Time will determine whether a multitude of potent chemicals initiate harmful consequences in them. Smallpox and diphtheria immunization must be continued. If to these is added immunization against whooping cough, scarlet fever and tetanus it must be determined that no deleterious change is induced by these chemical substances.

Tetanus toxoid must still be regarded as in the experimental stage. Many invariables, thus far unexplained, attend its exhibition. At the present time the evidence does not seem to justify its widespread application to large groups of the population.

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## NEWS NOTES

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The annual meeting of the American Association for the Study of Goiter will be held in Washington, D. C., September 12, 13 and 14 in conjunction with the Third International Goiter Conference.

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Drs. C. G. Leitch, O. Jason Dixon and E. H. Skinner, Kansas City, were guests of the Southeast Kansas Medical Society at Pittsburg, Kansas, on June 21 and spoke before the society.

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Dr. C. Edgar Virden, Kansas City, was a guest of the New Mexico Medical Society at Santa Fe on June 8 and spoke on "Radiation Therapy for the General Practitioner."

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The Second National Assembly of the International College of Surgeons will be held in Philadelphia with headquarters at the Bellevue Stratford Hotel on October 13 and 14. All members of the medical profession in good standing are invited to attend the scientific program and the various clinics. There will be no registration fee.

2. Cowles, P. B.: Tetanus Immunization, *Yale J. Biol. & Med.* 9:409, 1937.

3. Gold, H.: Tetanus Immunization by Alum Precipitated Toxoid, *J. Lab. & Clin. Med.* 23:903, 1938.

The National Association of Coroners will hold its annual convention in St. Louis at the Statler Hotel on August 29, 30 and 31. All coroners of the state are invited to attend. Dr. L. R. Padberg, St. Louis, is vice president of the organization. Dr. S. R. Gerber, Cleveland, is president, and Dr. Peter Zisch, Milwaukee, secretary and treasurer.

The cornerstone of the Malcolm A. Bliss Psychopathic Institute, being erected at Carroll and Grattan Streets, St. Louis, was laid June 26. The concrete framework of the structure had been completed and the hospital is expected to be ready for occupancy about June 1, 1939. The hospital will replace the observation ward at the City Hospital and provide additional clinical and research facilities in psychiatry. The hospital is named for the late Dr. Malcolm A. Bliss, St. Louis. Three of his grandsons and other members of the family took part in the ceremony attending the laying of the cornerstone.

The Annual Fall Clinical Conference of the Kansas City Southwest Clinical Society will be held in Kansas City at the Municipal Auditorium, October 3 to 6. The meeting this year has been dedicated to the principle that the new things in medicine, both good and bad, need a careful, objective analysis and most of the time of the meeting will be devoted to such analyses. There will be little review of proved, well known and well understood procedures and methods. The guest speakers and the Kansas City physicians on the program have been selected for their ability to discuss subjects which the program committee feels will be of vital interest to every physician attending the conference. Every physician is invited to attend the meeting for an intensive week of discussions and good times.



The \$150,000 reproduction of the Sir Luke Fildes' masterpiece, "The Doctor," first shown by the Petrolagar Laboratories at the Century of Progress Exposition, Chicago, in 1933, was recently presented by its owners to the new Rosenwald Museum of Science and Industry, Chicago. Following

the showing at the Exposition "The Doctor" exhibit went on a tour of 50,000 miles and was viewed by over five million people in eighteen principal cities throughout the country. Designed to remind the public of the importance of the family physician, it required the full time of the late Chicago sculptor, John Paulding, and the noted artist, Rudolph Ingerle, and a large corps of assistants nearly a year to complete it. In its new location in the Rosenwald Museum it will be seen by millions of visitors annually.

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Abbott Laboratories

Dextrose 10% in Ringer's Solution

Ringer's Solution

Tablets Phenobarbital Sodium—Abbott, 1 grain

Mixed Grass Pollen Extract, Decimal Dilution Set (Abbott)

Estrone—Abbott

Ampoules Estrone, 0.1 mg. in oil, 1 cc.

Ampoules Estrone, 0.2 mg. in oil, 1 cc.

Ampoules Estrone, 1 mg. in oil, 1 cc.

Vaginal Suppositories Estrone, 0.02 mg.

Vaginal Suppositories Estrone, 0.2 mg.

Estriol—Abbott

Capsules Estriol 0.06 mg.

Capsules Estriol 0.12 mg.

Ephedrine Alkaloid, Hemihydrate—Abbott

Ampoules Sodium Thiosulfate—Abbott, 0.5 Gm., 5 cc.

Ampoules Sodium Thiosulfate—Abbott, 1.0 Gm., 10 cc.

Ciba Pharmaceutical Products, Inc.

Ampules Solution Nupercaine 1:1500 in 0.5% Solution of Sodium Chloride, 20 cc.

Ampules Solution Nupercaine 1:1000, with Epinephrine 1:100,000, 2 cc.

Ampules Solution Nupercaine 1:1000, with Epinephrine 1:100,000, 5 cc.

Drug Products Co., Inc.

Pulvoids Sulfanilamide, 5 grains

Chas. C. Haskell & Co., Inc.

Sulfanilamide Tablets, 5 grains

Hospital Liquids, Inc.

Viosterol (A. R. P. I. Process) in Oil

Hoffmann-LaRoche, Inc.

Prostigmin Bromide

Prostigmin Bromide Tablets, 0.015 Gm.

Prostigmin Methylsulfate

Ampuls Prostigmin Methylsulfate 1:2000, 1 cc.

Ampuls Prostigmin Methylsulfate 1:4000, 1 cc.

Lakeside Laboratories, Inc.

Solution Ephedrine Hydrochloride, 3 per cent

Ampoules Ephedrine Sulfate,  $\frac{3}{4}$  grain, 1 cc.

Capsules Ephedrine Sulfate,  $\frac{3}{8}$  grain

Capsules Ephedrine Sulfate  $\frac{3}{4}$  grain



Lederle Laboratories, Inc.

Antipneumococcic Serum Types V and VII  
(Lederle) Refined and Concentrated  
Antipneumococcic Serum Types IV and VIII  
(Lederle) Refined and Concentrated

Eli Lilly & Co.

Ampoules Ephedrine Sulfate—Lilly, 1 cc. 0.025  
Gm.

Mallinckrodt Chemical Works

Aminoacetic Acid

McKesson & Robbins, Inc.

McKesson's Cod and Halibut Liver Oil

Merck & Co., Inc.

Vitamin B<sub>1</sub> Hydrochloride (Thiamin Chloride)—  
Merck

Mulford Colloidal Laboratories

Rhus Tox. Antigen—Strickler, packages of two  
1 cc. syringes

Rhus Venenata Antigen—Strickler, packages of  
two 1 cc. syringes

Parke, Davis & Co.

Theelin

Ampules Theelin Aqueous, 1 cc.

Ampules Theelin in Oil 1 cc.

Vaginal Suppositories Theelin

Theelol

Kapseals Theelol, 0.06 mg.

Kapseals Theelol, 0.12 mg.

Sharp & Dohme

Tablets Sulfanilamide, 5 grains

Gas-Gangrene Antitoxin (Combined) Concen-  
trated

Gas-Gangrene Antitoxin (Combined) Unconcentrated

Smith, Kline & French Laboratories

Benzedrine Sulfate

Benzedrine Sulfate Tablets

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## MISCELLANY

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### COMMITTEE ON MATERNAL WELFARE

#### CONFERENCE ON BETTER CARE FOR MOTHERS AND BABIES

PALMER FINDLEY, M.D.

OMAHA, NEBR.

Missouri makes its contribution to the crusade for better care for mothers and babies. At the Annual Meeting of the Missouri State Medical Association, held in Jefferson City, May 2 to 4, 1938, there was a round table discussion of maternal problems in which four rural practitioners presented case reports. These reports were freely and candidly commented upon by attending obstetricians, all in the spirit of constructive criticism.

The Committee on Maternal and Infant Health, composed of Dr. Ralph R. Wilson, Chairman, Dr. Buford G. Hamilton, Dr. Winton T. Stacy, Dr. E. Lee Dorsett and Dr. Joseph D. James, is to be commended for the inauguration of so helpful a program. On previous occasions obstetricians subjected themselves to the merciless criticism of their confreres while the general practitioners sat by enjoying their discomfiture. Now it was proposed to afford opportunity for the family doctor to present

his case for critical review by men presumably expert in the art of delivery and wise in the problems of the parturient woman. It was agreed by all that the conference was both profitable and enjoyable. There was reported an occipitoposterior position delivered by forceps, a ruptured uterus, a pulmonary embolism and a puerperal sepsis. The masterly manner in which these cases were treated and reported is convincing evidence that good obstetrics can and is practiced in rural communities.

Missouri, like all states in the Union, is far from making a credible showing in maternal and infant mortality and morbidity. The United States ranks high among nations in this respect, and until recent years we have done little to better our results. Not in the last twenty-two years has there been any considerable lessening in maternal mortality save from the toxemias. In this time there has been almost no decrease in the incidence and mortality of hemorrhage and sepsis. And sepsis accounts for 40 per cent of maternal deaths.

In a Conference on Better Care for Mothers and Babies, held in Washington, D. C., January 17 and 18 of this year, it was stated that in 1935 there were 150,000 maternal and infant deaths in the United States, 60 per cent of which were needlessly lost through mismanagement. There were approximately one million babies born last year in families on relief and with a yearly income of less than \$1000. It is in this group that we find maternal and infant mortalities the highest. Manifestly, the explanation lies in the lack of proper care. This the Conference proposed to rectify by providing more and better hospital facilities, more and better trained doctors and nurses. To this end the Conference recommends that the federal government make grants to the several states to provide better care for this indigent class. It was asserted that skilled nursing is almost entirely lacking in rural communities; that a quarter of a million women were delivered in 1936 in the absence of a physician and 15,000 had no care except that of the family or neighbor. Half of the two million births were unattended by a nurse. Inability to meet the expense accounts for much of this neglect. In rural areas only 14 per cent of births occur in hospitals. Of the 2,000,000 live births three fifths of the number were in the home.

In most localities a trained specialist is not available for consultation in obstructed labors. This is unfortunate because the general practitioner cannot be expected to master the many intricate problems involved in an obstetric practice. Likewise, hospital facilities are often inaccessible in rural areas. Denied the facilities of a modern maternity hospital the doctor finds himself seriously handicapped when confronted by an obstetric emergency. These and many other factors account for the high maternal mortality and morbidity in home obstetrics as compared with institutional practice.

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### CARE OF MOTHER AND INFANT

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In the remarks of last week, an attempt was made to point out the value of the care of the mother before the birth of her baby. It was pointed out that this care, known as prenatal care, has the following significance: It gives the mother a degree of assurance at a time when she is full of doubt and is constantly wondering if the outcome will be successful. It offers her the consolation of knowing that she is doing all within her power to make her entrance into motherhood an event

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of pride and consolation. By the proper preparation, both mentally and physically, it is more likely that she will return to a state of health equally as good as before, if not better. The speed with which she recovers will depend largely upon the degree of diligence she has manifested in preparation for it.

The child of a healthy mother who has carefully observed the laws of health is more likely to be well developed and nourished than the one of a mother who has disregarded these precautions. A child who has gone through unnatural hazards in the process of birth is threatened with various handicaps from pressure or other injury. A child born before its time, e. g., a "premature baby," is likewise badly handicapped. All too frequently children are born with the definite mark of nutritional disturbances in their bodies, which is tell-tale evidence that the mother failed to make proper preparation for the body development in the matter of her own diet and living before the birth of the child. This child, who is brought into the world without being consulted about its choice of mind or body or family connections, is expected to take whatever heritage its parents give it and make a creditable showing in a complicated world with only those endowments which its parents have supplied it.

The development of the human race is considered to be the highest of all known life. Its activities and existence are far more complicated than those of any of the lower animals or plants. Likewise, its reproduction is equally more complicated. The expectant mother, however, is provided with an intelligence and, as a creature of reproduction, is expected to be more efficient than lower animals. Every woman approaching motherhood should be made to know that she is really a fortunate individual by being able to participate in the highest function of her race. Unfortunately such a state of affairs often is not true, because her education in health has been neglected and because her frame of mind has been warped by creeping whispers of superstition, vulgarity and jealousy. It is the exaggeration of improper home training; it is the overdrawn zeal of moral crusaders, and the freely offered rubbish from lips of gossipers and gutter oracles that most disturb the expectant mother. She is made to believe that practically everything she does is likely to mark her child; she is made to believe that the slightest relaxation may choke her unborn child; she is constantly harassed with the terrorizing advice to do this, or that, or the other, for if not her child will surely grow up to be a thief or a murderer.

The relief of pain in labor is a matter of popular interest and conversation. It is a thing that has been studied for generations and so far the perfect drug or procedure has not been discovered. Statistics prove that over 90 per cent of women can have their babies without operation or instruments, and that the more medication they are given for the relief of pain the more assistance they will require in the end. While it is true that much is done to add to the comfort of the patient during labor in well equipped hospitals where highly specialized nurses and doctors limit their activities to this type of service, all such procedures are unwise under conditions less complete than in these hospitals. It is just as reasonable to expect the physician to attend the case alone and to do all these things for pain relief as it is to expect a housewife to prepare a Sunday or birthday dinner for twenty people on a camp stove by the side of a creek bank.

After the new mother has finished the process of labor, she should have success as her reward in having a live, healthy, normal baby, and being so attended during this time that a few days of natural recovery is all that is necessary. Her mental attitude should be joyful and happy; nevertheless it is easily overstimulated by excited relatives and friends. A state of excite-

ment and nerves and jitters can be so easily brought on by thoughtless acts of well wishing friends. The patient is a tired individual and unless her reserve strength has been carefully guarded during labor she may be very exhausted. While she may be so overjoyed at realizing that the expectancy of several months is over, that, plus exhaustion, may make the nervous system unstable for several days. Except for the immediate family it is well to keep away all visitors for the first four days; and unless there is every evidence of rapid recovery this time should be extended.

The actual care of the new mother is based upon three principles: She must have rest; she must have scrupulous cleanliness to prevent infection, and she must have ample and well balanced food to rebuild her strength. The term "rest" has such a variety of meanings in the minds of people that it may be necessary to explain the kind of rest a new mother needs. It is unusual to allow her to stand on her feet before the tenth or twelfth day. It is necessary that she have from nine to ten hours of sleep at night and, in addition, one or two hours of rest during the day. Not only must visitors be made to realize this but also her own family. A daily warm bath properly conducted plus an alcohol rub at night is a great contributor to good sleep. No mother should be responsible for the care of her baby in any way during the first two weeks after it is born, because infants need so much night care. It is wiser to have provision made for another person to care for the baby until it is six weeks old so the mother may get ample rest and sleep. Her progress should be so closely observed by the attending physician that he can determine on what day she shall start some muscular exercise, on what day she may be propped up in bed and on what day she may be out on the floor.

The importance of cleanliness should be realized from the instruction the physician gives the mother during her last month and from the manner in which she is cared for immediately preceding and during her labor. Instruction in cleanliness after birth can be understood by responsible friends and relatives if time is taken by the attending physician to so instruct. Germs appear to travel in a way most peculiar unless their life cycle and activities are understood. They are not hard to kill outside the body but once they have entered the body it is difficult to find any medicine that will injure them without injuring the body tissues also. Therefore, the prime idea of cleanliness is to prevent germs and to prevent infection rather than trying to kill them with medicine after they are once in the body.

Last week in the lecture on prenatal care, it was emphasized that before the baby is born mothers may carry germs which can flare up like kindled fire after the process of birth is completed. Because of the importance of infection the patient's temperature should be carefully watched during the first few days. The one in attendance should know how to read a thermometer and the temperature should be recorded at least twice every twenty-four hours. Conditions during birth and the type of individual make it necessary for the attending physician to explain the value of fever variations during these first few days. For instance, small changes in fever may be due to constipation, or the milk coming into the breast, or to a mild cold; but, it may also be due to that awful condition known as "childbed fever" which is so dreaded by every physician. That is the reason why the proper interpretation of any fever change can be made intelligently only by the physician himself.

The type of food for a new mother is important. While she needs the most nutritious and well balanced diet, it is to be remembered that for the first few days she is tired and is in bed engaging in very little exercise; for these reasons she cannot digest food as before her confinement. Therefore, all food should be readily digesti-



ble, should be well cooked and should have highly nutritive value. Furthermore, the character of the milk the mother provides for her baby is very closely related to the character of food the mother eats. The child's digestive apparatus during the first few weeks is normally rather delicate and is often unable to handle milk derived from foods which the mother may herself thoroughly enjoy. For instance, it may be that the mother would relish turnips, onions, chili, radishes and freshly picked fruits, but the milk derived from this food source could cause the baby to be colicky and restless and have a gastro-intestinal upset until it is old enough to handle such foods.

It is in order to point out that the problem of body elimination on the part of the mother is important. The time for the patient to have her first bowel movement should be left entirely to the physician because he should know the type of diet that she is on and the amount of injury to her muscles during childbirth. These muscle injuries should not be aggravated by giving a laxative or an enema too early.

The proper care of the mother's breast is essential, usually more so for the first baby than for following ones. Some preparation of the nipples should have been made for weeks before the arrival of the child so that very little should need to be done afterward except to cleanse the nipples between nursing periods. Generally the mother's milk does not come into the breasts until the third or the fourth day but the baby should be put to the breast three or four times daily as soon as it is strong enough to nurse in order to stimulate the process of milk formation.

During the first week of nursing the nipples may become cracked and actually bleed if they have not had good care before birth. These bleeding points could possibly lead to infection and serious breast trouble unless properly cared for by the physician.

Only a few mothers will be unable to nurse their babies if they prepare the nipples beforehand, if they are in good health and if they actually want to nurse their child.

The medical profession has noted with a great deal of interest during the last two years that many current periodicals have emphasized the value of breast feeding over bottle feeding. Any person, whether physician or layman, who is interested in body and nerve growth, can be readily impressed with the difference between breast fed and bottle fed young in the human being as well as other mammals. Modern mothers have grown so enthusiastic about reducing their body weight after childbirth that unwisely they begin to diet immediately thereafter. This affects the milk supply; everyone should know that this surplus weight of pregnancy gradually disappears of its own accord in normal women as they perform more exercise and are outdoors more as the baby grows older. A practice of extreme value to the nursing mother is for her to lie down approximately a half hour before the baby nurses.

As commonplace as it may seem it is nevertheless true that nursing mothers could gather valuable pointers from the keepers of milch cows and milkers on dairy farms.

In a general way, the progress made by a new mother can best be marked by three things as pointed out above: (1) It is necessary to watch her fever from day to day; (2) the amount of red flow should rapidly decrease from day to day and it is usually absent by the eighth or ninth day. To veterinarians and stock raisers this has a definite meaning. In their terms, the woman should "clean out" at birth and the "day to day waste" should grow less. A new mother should not be allowed to walk while still having red flow. If such is the case, a physician should determine which of the many causes is accountable for her condition. (3) A new mother's progress can be measured by her general body strength.

If when she gets out of bed she feels weak and faints, it indicates that she is out of bed too soon. Exercises, started when the baby is two or three days old, in normal cases should build up her muscle tone to the point that it should not be much of a strain to get out of bed on the tenth or twelfth day.

If the baby is in a satisfactorily warm place and has all the mucus out of its throat, it is better to leave it alone approximately half an hour before giving it the first bath. This allows it to become accustomed to the new world and to establish a rhythm of breathing and heart beat without strain. Handling a new baby too much is definitely harmful. After the physician clears out the baby's throat and puts silver nitrate in its eyes, it is of prime importance to keep the body warm. The tissues in a newborn baby, if once chilled, seldom are able to return to normal; very much like cooking eggs, they can never be returned to their original state. During the first few hours of life, it is important for the baby to be kept lying on its right side and usually with its head a little lower than its feet, unless the physician specifically indicates otherwise. If there is any doubt about the care of the navel cord it is most important to consult the physician inasmuch as this is a source of infection that may be very serious in the newborn.

Nature would have provided a milk supply early if she had intended that the baby have a great deal of food before the third or the fourth day. Usually a little sweetened water or some other preparation of about equal strength is all that is needed. Every baby is supposed to lose considerable weight during the interval before the milk supply of the mother has arrived.

It is queer how thoughtless people are in fondling a new baby. Oftentimes individuals with a bad cold or even worse diseases consider it a privilege to smother the little thing with kisses or rubbing a handkerchief over its face into which somebody has just blown the nose.

A definite set schedule for nursing and bathing and sleeping is one to which all newborn babies readily adapt themselves. Many times a baby who has had too much to eat will cry just in the same loud voice and just as frequently as one who has not had enough to eat.

The clothing should always be scrupulously clean and changed daily. In the summer months, however, the greatest mistake is to dress the baby too warmly. During summer weather Missouri babies may thrive for weeks by wearing only a diaper. It will be remembered, however, that newborn infants are particularly susceptible to pneumonia and during the winter months not only is the matter of clothing to be carefully observed but also draughts of fresh air are to be avoided.

It must be emphasized that it is not the act of carrying and having babies that makes women age and appear to be old, but it is the manner in which they take care of themselves afterwards.

## CHILD WELFARE

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The problem of child welfare is far too complex for full consideration here. Accordingly, today we will consider briefly the health welfare of the child.

Diet is an important factor in child health. The necessary food for the growing child is rather simple but very vital. The growing child needs one one hundredth of his body weight each day in sugar or starches. We get this in potatoes, cereal, bread and in all the sweetened foods we eat. This sugar in our food furnishes fuel for immediate exercises and work and it is stored in the body as a reserve against the poisonous effects of dis-

ease. Sugar is so easily digested that it becomes extremely valuable in the diet during severe sickness such as measles, pneumonia, scarlet fever and diphtheria.

We also need protein in our food. This substance is used in repairing worn out body cells and in building new body cells in the process of growth. It is needed to build muscles, bone, blood and brain. We get protein in milk, eggs and lean meats. The protein found in vegetables is of little use in building body tissue. It is important then that the growing child have meat or eggs or milk. In a recent survey made in several states it has been found that the people living on farms and in small towns are not eating enough milk and eggs to meet the necessity for protein.

If we consider milk alone for a source of protein the growing child needs about one and one half ounces each day for each pound he weighs. From this, it is plainly seen that the growing child needs a quart of milk a day and at least one egg a day in his diet. Of the meats, lean beef and fish are the best. Lean pork and lamb, however, are all right.

We need a small amount of fat in our food. This is necessary for certain body building and is stored in our bodies for future need. It helps in assimilating the lime needed in our bones and other tissues. The child gets sufficient fat if he drinks his quart of milk a day and eats a little butter in addition. Fat should be greatly reduced during severe illness. Sick children having high fever should be fed practically no fat. Even the cream on the milk should be taken off before feeding it to sick children. These toxic children may have the sugar and protein left in the food or even slightly increased to make up for the loss of fat. Many of the digestive upsets in the normal young child and in the older child who is sick develop as a result of failure to cut down on the fats in the diet.

In addition to these main food necessities we need water if we are to live. A growing child needs one tenth of his body weight in fluid every twenty-four hours.

The minerals needed in the body all will be supplied if we eat meat, fish, eggs, potatoes and other vegetables—and drink milk. Vegetables are particularly useful in supplying these mineral needs. Cooking does not hurt vegetables as a food.

The vitamins we hear so much about now-a-days are important to growing children. Vitamin C which is found in citrus fruits and in tomatoes is the only one that is destroyed by cooking so all growing children should have from one to two ounces of fresh orange or tomato juice each day. When cloudy weather prevents enough sunshine, vitamins A and D, which with sunshine are normally present in sufficient quantities in cream, eggs and butter, should be increased by other fats in the diet in the form of cod liver oil. One teaspoonful a day is sufficient. Vitamin B, which is present in vegetables and grains and yeasts, is important and should be given in the form of malt extract or yeast products during illness from chronic infections and in "run down" conditions.

Please do not accept the kindly advice of some untrained, neighborhood busybody, nor enticingly pictured advertisement in your favorite story book as to your personal needs for vitamins. Get this information from your physician for he alone is capable of telling which one your child needs and then only after careful examination of the child. Overdosing on some of these vitamin products is distinctly harmful.

Before leaving the problem of food let me emphasize one point. Many infections arise from eating food laden with harmful germs. For that reason we are safer when we eat only cooked food. There is no food value and no vitamin, excepting vitamin C, and no mineral value taken from food when we cook it. This reduced vita-

min C can be supplied by raw orange juice or by canned tomatoes or tomato juice. Cooked foods should not be kept over but should be eaten soon after cooking. Guard your water supply and your milk supply closely. Have your drinking water, spring or well, tested by the State Board of Health two or three times a year, or at any time floods or other contamination might occur. Have your cows tested regularly for undulant fever and for tuberculosis. When in doubt either boil or pasteurize all milk you drink.

Sufficient rest is important for the growing child. These children are more active than we at first realize. Until a child is 3 years of age he should rest in bed from 10 to 12 in the morning and from 2 until 4 in the afternoon. From 3 years on, the long day should be broken by a one or two hour rest in bed in the afternoon. This is very important in children who are as much as 10 per cent or more underweight.

Medical supervision and physical defects are so closely akin that we will discuss them together. When we entered the World War, the doctors of this nation were astonished to find that from one fourth to one third of our young men were physically defective. A few of these defects had been present from birth, but most of them could have been prevented. Since that time, most of us have felt a need for closer medical supervision of the growing child. We now have evidence that by watching the diet, by correcting little weaknesses here and there, and by guarding against infection and properly treating it when it does occur, we are able to greatly reduce the number of physical defects in adults.

Many of our impairments of later life are the direct outcome of improper diet and neglected nutritional disturbances of childhood. Chronic infectious diseases such as rheumatic infection and tuberculosis often attack individuals during periods of lowered resistance due to malnutrition and fatigue in childhood. For these reasons alone it is important to have a physician give even the apparently well child a thorough examination and dietary advice two or three times a year. At these visits any necessary and advisable vaccinations can be done and in so doing the actual cost of the maintenance of health can be lowered by saving the expense of treating preventable disease.

Child health welfare can be further advanced by the home education of our children in hygiene. Even young children will be greatly benefited by seeing parents and older children properly sterilize dishes and cooking utensils by boiling after the routine washing. In like manner, the young child will want to brush the teeth properly and rinse his mouth after meals if he sees his elders interested in this ceremony. He will not want to be infected by kissing if he is not so taught by his elders. He will display real pleasure in washing his hands and face with soap and water whenever they are dirty and always before eating or drinking food if he is so taught from infancy. He will not want a bite from another child's apple or cookie unless he sees his elders doing so. He can be taught early in life to eat only his own food from his own dish and spoon.

Some of these unsanitary habits are taught children innocently by trying to teach them unselfishness by offering or dividing candy and other foods. In addition to these little chances for cross infection in the home, we have the common drinking cup and towel, both of which are often far too popular for long periods of time between washing.

We can extend this education in personal hygiene to the school by doing away with the common drinking cup and the common towel and providing sterile paper cups and paper towels.

If we realize the dangers of the spread of disease by these agencies we will demand that food handlers and dispensaries and boarding houses and restaurants as well as all public eating places not only supply us with



sterile, clean food, but also provide service which is free from disease producing germs. Are the dishes sterilized where you eat and drink? Are the linens sterile? Is the milk pasteurized? Are the attendants healthy and free from tuberculosis, sore throat or typhoid germs? Are flies constantly contaminating the food? Ask yourself, and the management. If the answers to these questions are unfavorable, you owe it to yourself and to others not to eat there.

Finally, we have a duty toward others. We owe them the common decency of not exposing them to our germs when we are sick. The most common breach of this trust is in the care of the common cold. A common cold is very contagious and is only contracted by exposure to someone else who happens to have a cold. Let us then put the child to bed at the first sign of watery eyes and a "runny" nose and keep him there three days or longer, if the child is not well. Keep other persons away from him and thus save them the illness, perhaps death, which may result in exposure to him. Follow this rule for all other illnesses. Follow it in the home, in school and in church and Sunday school, in fact, in all our social activities.

Prizes given at school and at Sunday school for unbroken attendance should be discontinued. Awards should be given in the event a child takes a cold or measles and does not give it to anyone else in the school room or in the Sunday school or church he attends. There is no point of valor connected with insubordination to a cold or any infectious disease. There is a distinct mark of selfish disrespect for the rights of others by not staying in bed away from all social contact with them.

In addition to the foregoing precautions, have your doctor vaccinate all of your children against smallpox, diphtheria and typhoid fever. By vaccination, these diseases can be prevented. By similar methods a few diseases such as whooping cough and measles can be made lighter in form and less deadly.

## DISEASES TRANSMITTED FROM ANIMALS TO MAN

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There is a need in the interest of public health for a wider distribution of information concerning the diseases affecting animals which are transmitted to man. It has been said that "man is his own worst enemy" in the spread of communicable disease but that the lower animals are a close second."

Man has been in close association with animals as far back as recordings of antiquity exist. Apparently our common domestic animals are the most dangerous sources of diseases transmissible from animal to man. This includes our faithful friend and companion, the dog. Wild animals and birds play a lesser role.

It is only in comparatively recent times that attention has been called to rather serious diseases being transmitted from wild animals and birds to man. Tularemia or rabbit fever of rabbits and psittacosis or parrot fever of parrots and parakeets are two instances of diseases which in recent years have caused serious sickness in man. For that reason mention will be made of the more important diseases from these sources.

Tuberculosis is a disease which naturally infects three species: people, cattle and poultry, and each is caused by a different type of tuberculosis organism.

Because the bovine or cattle type of tuberculosis may also infect people in addition to the human type, bovine

tuberculosis has been and still is an important public health problem.

Positive proof that the bovine tubercle bacillus was transmissible to man was first demonstrated by Dr. M. P. Ravenel from the State Live Stock Sanitary Board of Pennsylvania in 1901. In a paper before the London Congress on Tuberculosis in 1901 he cited five human infections. Most of the animal or bovine tuberculosis that infects humans is contracted through drinking infected milk. Due to the fact, however, that campaigns by the United States Bureau of Animal Industry for the eradication of this disease have been in operation for years in the United States our country is fast becoming free of the bovine or animal type of tuberculosis. At present there are only two states in the United States which are not modified accredited areas for bovine tuberculosis. This means that in the modified accredited areas there is less than .5 per cent of tuberculosis. No doubt in a few years both of these states will be modified accredited areas since intensive work is now being carried on to reduce the disease to the point where they can also be accredited and this source of menace to public health will be practically completely eliminated from the United States.

### ANTHRAX

Anthrax disease is one which normally affects animals but is also secondarily a source of infection of man contracted either directly or indirectly from animals.

Historically, anthrax is of double significance. It was the first disease of man and animals shown to be caused by a microorganism. This bacillus is one of the largest disease producing organisms known.

Anthrax occurs in all parts of the world and was first reported in cattle of Louisiana in the United States in the early French settlement. Later reference in that state as well as from lower Mississippi and gulf states indicates that the disease was more or less prevalent in that region.

The first cases in humans in the United States of which there is a record occurred in Philadelphia in 1834. Numerous references appear since that time in medical literature indicating that anthrax has existed especially in the northern states of the Atlantic seaboard and in the central gulf states.

All animals, domestic and wild, are subject to anthrax to a greater or lesser degree. Sheep and cattle head the list of sufferers but horses, goats and even hogs may contract the disease on occasion.

Anthrax in man is practically always derived from an animal. Many cases have been contracted by humans in caring for sick animals affected with anthrax. Handlers of hides and men working in tanneries have been known to carry the infection home to members of their families though escaping the infection themselves. Human anthrax in the United States is primarily an industrial hazard. Workers in hide, skin, leather, hair and wool industries show a greater number of cases than any other occupations. This is followed by transportation workers, farmers and veterinarians. It has been estimated that there are about 140 cases of anthrax in man in the United States each year.

### PREVENTION AND CONTROL

The prevention and control of anthrax in man should be directed to the eradication of the disease in animals, elimination of industrial infections and finally the use of antianthrax serum for the cure of infected cases.

The most useful method of controlling the disease in animals has been vaccination. The government has regulations to control the introduction of anthrax on imported hides, hair and wool, also better methods of sterilizing such products, and if these regulations are enforced will greatly reduce the cases of human anthrax in this country.

## UNDULANT FEVER OR BANG'S DISEASE

Undulant fever of man is a disease which is contracted from cattle, hogs and goats. This disease in animals is known as Bang's disease. Undulant fever of man or Bang's disease of animals is caused by an organism known as *Brucella abortus*. There are three types of the organism, one which affects each of the three species of animals mentioned, cows, hogs and goats. These organisms are probably all descendants from a common parent strain of the *Brucella abortus* organism and any one of these three types may produce undulant fever in man.

In this section of the United States the disease appears to be very rare in milch goats. The author of this broadcast has tested many milch goats in this state without finding a single infected animal. Human beings are not very susceptible to the disease otherwise there would be many more cases in man in the United States.

The control and prevention of undulant fever in man should be directed to the control of Bang's disease in cattle, swine and goats. In the United States today a vast program of blood testing by the agglutination test for Bang's disease and the elimination of cattle known to be infected is being carried out by the Bureau of Animal Industry in every state in the Union. In Missouri alone since October, 1934, 1,201,509 samples have been tested for Bang's disease. Of this number 78,417 or 6.5 per cent were found to be infected with the disease. All the cattle which react to the test are promptly eliminated from the herds. It is the hope that eventually Bang's disease will be in the same category as bovine or cattle tuberculosis is at present and that it will in time be completely eradicated from the United States.

Much has been done toward the control of the disease in humans by proper pasteurization of infected milk since milk is one of the sources of infection in man. Undulant fever in man, however, is contracted more often by butchers and farmers handling infected hogs and cattle than from any other source.

## RABIES

Rabies or hydrophobia as formerly known is a serious disease of the canine race, especially dogs. In the Veterinary Department of the University of Missouri over 77 per cent of the animals examined for rabies were dogs and most of the cases of rabies which occur in other animals and in man have their source in dogs. All warm blooded animals are susceptible to rabies, including man.

This disease is one of the oldest known diseases of animals and man and there is no seasonal variation in its prevalence. The old idea of "dog days" being the worst time for this disease has been exploded. Rabies has been particularly prevalent the last few years in the United States.

Rabies is a nerve disease and the virus or infectious agent is found in the nerve tissues, the saliva, lymph, milk and other body fluids of infected animals though the greatest danger is from the saliva, nerve and brain tissues. It is important to know also that the saliva of a dog may be infectious as long as five days before the onset of symptoms of rabies. That is the reason why in case one is bitten by a dog suspected of having rabies that the dog should be confined for observation for at least 14 days to assure one that the animal was not harboring the virus of this disease at the time of biting the individual.

There are two distinct forms of rabies in dogs. One is the furious type and the other the dumb or paralytic form. The furious type is responsible for the spread of most cases of the disease. In either the furious or dumb type of rabies the affected animal may live from three to ten days after the symptoms develop. Most dogs die in from three to five days.

In the furious type of rabies the dog may roam the country for miles, biting anything that happens to come its way. Many cases have been known where the dog will visit one farm after another along a rural highway. It will fight dogs on the farm, perhaps bite some of the farm animals including chickens and then proceed to the next farm and repeat the operation. They have been known to travel as far as thirty-seven miles from their home before being killed after inflicting damage all along the way. In some cases they will return home and soon die.

In the dumb form of rabies the lower jaw becomes paralyzed and the mouth will hang open with saliva drooling from it. These cases cannot inflict a wound by biting and therefore are not as dangerous as the furious type. However, the saliva from these dogs is just as infectious and dangerous as the saliva from the furious type. Many cases of exposure to rabies by people have occurred by the owner suspecting that the dog with dumb rabies had a bone lodged in his throat and in attempting to remove the suspected bone have exposed themselves to rabies. In addition to danger from bites of rabid dogs exposure of fresh cuts or injuries to the skin to the saliva of a rabid dog is very dangerous.

Approximately 83 per cent of dogs which become infected develop the disease within 60 days after they are bitten so that dogs which are suspected should be confined for 90 days after exposure. Most of the cases which the author of this broadcast has observed in which the exact day of exposure was known the dogs have all developed the disease on the 25th day and it is usually 20 days or more before the dogs develop rabies after being bitten. I mention this because many people think that rabies can develop much sooner.

The question is often asked what is best to be done in case an individual is bitten by a dog which is suspected of having rabies? The animal should be captured if possible and placed in safe quarantine. In no case should the animal be killed unless that is necessary in his capture, for if the dog is killed too early in the stages of rabies the Negri bodies which are diagnostic of this disease may not have developed sufficiently in the brain for a laboratory diagnosis. Animals should be allowed to die before an examination is made. On the other hand if the dog is retained alive and continues healthy for 14 days one may be sure that it does not have rabies and that the treatment of the bitten person will be unnecessary. However, in case a person is bitten on the head, face or neck, the treatment for rabies should be started at once since bites nearer the brain will develop more rapidly than where exposure is on the extremities.

## CONTROL

If the control of rabies was directed to the eradication of this disease in dogs it is likely that the disease would completely disappear from the United States within a reasonable period. There are several ways in which this can be accomplished but at present the most practical means would be the vaccination of every dog in the United States annually and the institution of strict quarantine of all dogs for 60 to 90 days with the destruction of all homeless or stray dogs in any case of an epidemic.

## TULAREMIA

Tularemia or rabbit fever as it is commonly termed is a disease which has in recent years caused considerable sickness in humans. It is primarily a disease of wild rodents, especially rabbits and hares. It is secondarily a disease of man transmitted in this part of the country chiefly by persons dressing rabbits which have been killed for consumption though it may also be transmitted by blood sucking flies or ticks.

This disease has been found in most sections of the United States, Japan and Russia. People in dressing



rabbits for the table should be very careful to avoid infection by thoroughly washing their hands after dressing rabbits and being careful to see that no injuries or fresh wounds exist on the hands. It is probably much safer to use rubber gloves while skinning and dressing rabbits. Hunters should be especially wary of rabbits which do not run and are easily caught or knocked over with a stick since these animals are likely to be in the advanced stages of tularemia or rabbit fever. The meat of cooked rabbits is not dangerous for consumption because cooking quickly destroys the germs of this disease.

Prevention is a difficult thing but fortunately rabbit fever is not a serious disease that will ever develop epidemic proportions since it is a disease transmitted ordinarily from animals to man and not from man to man. Humans can protect themselves by avoiding contact with infected animals and in laboratory work by wearing rubber gloves.

#### GLANDERS

Glanders is a disease of horses that affects humans and though man is very susceptible to glanders infection at the present time there is very little glanders in America, but because of the fact that man is highly susceptible to glanders and the death rate from the disease is exceedingly high every precaution should be taken to protect man against this infection.

#### SWINE ERYSIPELAS

Swine erysipelas is a disease of hogs which in the past few years has acquired a great deal of prominence in the North Central States because of its frequent appearance in hogs in this hog growing section. Though at the present time it is not a serious disease as far as the human being is concerned, people are very susceptible to the disease and numerous cases in the past have been reported chiefly among those working with sick hogs and laboratory workers in dealing with the germ of this disease. But like other diseases which are not prevalent our fine system of meat inspection by the Bureau of Animal Industry will prevent and control the spread of this disease not only in swine but protect people by proper inspection.

#### LOCKJAW OR TETANUS

Lockjaw or tetanus is a disease which cannot be charged directly to animals except as they act as passive carriers of the organism. The horse and the cow harbor this germ naturally in the digestive tract and strange to say the horse is the more susceptible to infection with this germ.

Man and animals contract tetanus by the contamination of puncture wounds of the body with material containing the germs of tetanus. Stable manure and garden soil are particularly dangerous since they practically always contain the germs of this disease. Any person who is injured by deep puncture wounds should immediately consult a physician in order that tetanus may be averted by proper treatment both of the wound and by the use of antitetanus serum. It is a routine in veterinary practice to give all horses which contract puncture wounds the antitetanus serum immediately. Otherwise tetanus is almost sure to develop and is practically always fatal.

#### TRICHINOSIS

There are a great many parasitic diseases of animals to which man is subject. Probably the most important of all is a disease principally affecting hogs and rats known as trichinosis. Man is extremely susceptible and may become infected from eating infected pork. Both the hog and the rat are capable of harboring this parasite and transmitting it to man. This little worm penetrates through the walls of the intestine and be-

comes encysted in little pockets in the muscles of hogs and rats. Man in eating improperly cooked infected pork contracts the disease. The death rate from this disease in humans is not high, probably from 10 to 15 per cent.

The prevention of trichinosis in man should consist in preventing people from eating pork which has not been properly cooked. Another way to prevent human infection is to refrigerate the meat. Very low temperature as well as salting and drying will kill the parasite. The United States Department of Agriculture warns all persons "not to eat pork or sausage containing pork where it has not been officially inspected or not until it has been properly cooked." Another safeguard is the destruction of rats in the vicinity of hog houses and careful inspection of all hogs slaughtered for meat purposes.

#### TAPEWORMS

The beef tapeworm which is found in the larval stage in the muscles of cattle has its main life in the intestines of man. A similar relation exists between man and swine for the pork tapeworm. There is also an important tapeworm of fish (*Diphyllobothrium latum*), originally a native of eastern Europe but has become a common inhabitant of the large lakes of Canada and the North Central States. This tapeworm infests man as a result of eating insufficiently cooked fish.

The dog tapeworm (*Taenia Echinococcus*) is fairly common in the southeastern United States and man contracts the disease through association with the dog. There is another tapeworm also which spends part of its life cycle in the cat and dog and finds its way through infected fleas into the intestines of children.

There are other diseases and parasites which are transmitted from animals to man but time does not permit the inclusion of all these in this short broadcast. Only those have been discussed which are of most importance in the United States today.

This concludes the brief discussion of diseases transmitted from animals to man, under the auspices of the McAlester Memorial Foundation.

## OBITUARY

### JOHN H. ROTHWELL, M.D.

Dr. John H. Rothwell, Liberty, a graduate of Bellevue Hospital Medical College, New York, 1883, died April 23 at his home after a short illness, aged 79 years.

Dr. Rothwell was born in Huntsville. He attended Mt. Pleasant College at Huntsville and William Jewell College at Liberty. After reading medicine for a time under the late Dr. J. M. Allen in Liberty he attended the Missouri Medical College and received his medical degree from Bellevue Hospital Medical College. He began his practice in Kearney but after a short time moved to Liberty where he remained in active practice until a short time before his death. He served several terms as county coroner.

He served as delegate to the Annual Sessions several years. He was elected an honor member of the Clay County Medical Society in 1934.

### MARTHA SHORT WRIGHT, M.D.

Dr. Martha Short Wright, Rolla, a graduate of the Ensworth Medical College, 1892, died April 16, aged 76 years.

Dr. Wright was born near Vandalia, Illinois. After receiving her medical degree she took postgraduate work in Philadelphia and Ann Arbor, Michigan. She

practiced in Rolla for forty years, specializing in diseases of women and children.

Surviving are two daughters and two grandsons.

#### ENOCH N. GENTRY, M.D.

Dr. E. N. Gentry, Sturgeon, a graduate of the University of Louisville School of Medicine, 1879, died at his home April 23, aged 83 years.

Dr. Gentry was born on a farm north of Sturgeon. He attended Mt. Pleasant College at Huntsville and the University of Missouri. He began practice in Harrisburg and after three years moved to Sturgeon.

Dr. Gentry had endeared himself to his community during the long time he had served them. In many homes children and then grandchildren were born with Dr. Gentry in attendance. He was ever ready to care for the sick, first making the necessary trips by horseback or in a buggy and in later years by automobile when the roads permitted. Only a few years ago he was compelled to abandon his car in a snowdrift but continued on foot to attend a patient.

For fifty years he taught the men's Bible class of the Baptist Church. Three years ago he was presented a Masonic pin commemorating fifty years of active membership in that order. He was elected an honor member of the Boone County Medical Society in 1935.

He is survived by four daughters, two sons and ten grandchildren. Dr. E. N. Gentry, Kansas City, is a son.

#### MEYER J. EPSTEIN, M.D.

Meyer Epstein, St. Louis, was born on January 20, 1857, in St. Louis. He attended the public schools and was graduated from the St. Louis High School—there was but one at that time in the city. He received his M.D. from the old Missouri Medical College with the class of 1877. He served as intern at the City Hospital for several terms, and then spent several years of postgraduate work in the medical centers of Europe, following which he embarked in private practice—an old style family physician, whose entire life up until the last few years when his health began to fail was devoted to his clientele, a large and loyal group. He was elected an honor member of the St. Louis Medical Society January 12, 1927.

Dr. Epstein's only hobby was reading, and through the years his spare hours were devoted to the study of the latest developments in medicine as well as to the reading of other scientific works and classical literature, so that he was not only a student but also a scholar. He was a better listener than orator, but on the occasions at medical meetings when he chose to enter into discussions he displayed a wide and accurate knowledge of scientific data, a knowledge which undoubtedly stood him and his patients in good stead and which, unquestionably, was a great factor in the confidence he inspired in many a sufferer. He reached the ripe old age of 80 in full possession of his keen mental faculties, and passed away, following a coronary attack, on June 17, 1937, while visiting in Chicago.—F. W. V. in the *Weekly Bulletin* of the St. Louis Medical Society.

#### EUGENE G. GREER, M.D.

Those of you who knew the vicinity of Garrison and Easton, St. Louis, undoubtedly were familiar with Billie Pilkington's drug store. The children from the Divoll and Stoddard schools were always welcome and naturally as one grew up this drug store become a rendezvous. It was here I met Eugene Greer for the first time in the spring of 1906. I can remember with great clarity many meetings at the cigar counter when Dr.

Greer won the throw in the familiar game of dice for the cigars. Even before this I had noticed Dr. Greer during the time that he was resident at the Jefferson Hospital which was then a part of the P. & S. Medical College. He attracted immediate attention by his erect posture, meticulous dress, his beautiful shock of blond hair and a charming personality.

Dr. Greer came of pioneer stock of wealth and culture which had been impoverished by the Civil War. His forebears were Confederate sympathizers and lived in Kentucky. His father was able to study medicine for two years but did not continue after marriage at an early age. Two uncles became physicians as well as a brother who graduated two years prior to Dr. Greer. Medicine was in his blood to such a point that reading medical books was as much a hobby with him as were his detective stories.

Dr. Greer gloried in the fact that his great grandfather owned the first steam ferry on the Ohio River and this boat ferried Indians across the Ohio at the time the government was taking them from their homes and sending them out to the reservations. On one of the last trips the unfortunate bursting of a boiler killed several Indians and almost caused renewed warfare.

Dr. Greer had an intense love for animals. At 3 years of age he had twenty-one cats as pets. It was his love for a sick cat which caused him to become incapacitated. His pet cat was missing and in a search of the cellar he stumbled over an obstruction which resulted in his spending the next seven years in an invalid's chair. He was also fond of horses and nothing interested him more than a good horse race.

As might be implied Dr. Greer was forced to educate himself. He accomplished this by working as a conductor on the street cars of Paducah and St. Louis. He married his childhood sweetheart shortly after graduation. Mrs. Greer survives Dr. Greer and she has many pleasant memories of his loyalty to the profession and his high ideals of the old time general physician.

Dr. Greer was chairman of the 19th Ward Draft Board. He was inordinately proud of the service he rendered the government. He was told that his board had fewer men returned than any draft board in this community. His outlook on life was a humorous one and he could always be expected to see a thing through whether there was any financial remuneration or not.

Dr. Greer loved and wrote poetry. I should like to quote one of his poems on his beloved state, Kentucky.

Oh, Great and Illustrious Kentucky,  
With thy waving fields of blue,  
With thy thorough-breds so noble,  
And thy daughters brave and true,  
With the pure air of Heaven  
Fanning thy hill tops so high;  
How proud that in thy boundaries,  
The glorious light first met my eye.  
And may the last honor that is done me,  
When on earth I have ceased to toil,  
Be to fold me away in thy bosom,  
'Neath thy blue grass, 'neath thy soil.

—E. L. M. in the *Weekly Bulletin* of the St. Louis Medical Society.

#### FREDERICK S. HAEBERLE, M.D.

Dr. Frederick S. Haeberle, St. Louis, affectionately known as "Fred" by many of his colleagues and former medical students, was born in St. Louis, August 1, 1866. He died July 14, 1937, after a prolonged and complicated illness with diabetes as a main factor.

He attended Smith Academy, Central High School, Elmhurst (Illinois) College, and the old St. Louis College of Physicians and Surgeons. He took postgraduate work in Berlin in 1891-1892 working with Von Bergmann, Koch and others. On his return from abroad he brought the first diphtheria antitoxin to America and St. Louis. In America it was first successfully used in



St. Louis on several cases in association with Dr. A. F. Bock and others.

Dr. Haeberle was a member of the old Physicians and Surgeons faculty and later lectured at the Marion-Sims College on osteology and anatomy until 1906.

Dr. Haeberle wrote and spoke German fluently and the German professors could hardly believe that he was not a native born German. During the years that Dr. Heber Roberts published the first X-ray Journal in America he depended solely on Dr. Haeberle for all German correspondence. He carried on all of the correspondence, resulting in acquiring pitch blende from Bohemia for Dr. Roberts who was the local pioneer with the roentgen ray.

Dr. Haeberle was associated with Dr. Hugo Summa in internal medicine for many years and was widely recognized as an able consultant and reliable diagnostician. He was in practice over forty-five years. He was a close friend of the late Dr. Louis Crusius, a renowned artist physician for many years. Dr. Crusius made an enviable reputation among physicians and the laity for his numerous anatomical drawings of a humorous character. Quite a number of these original drawings were given to Dr. Haeberle from time to time. They will eventually be presented to the St. Louis Medical Society.

During the last five or six years Dr. Haeberle was in constant ill health but he persisted in carrying on to the last, resolutely and bravely.

Dr. Haeberle is survived by his widow, Mrs. Helen Haeberle; his brother, Honorable Armin T. Haeberle (now retired), former U. S. Vice-Consul in various foreign locations in South America and Europe for over thirty years; Mrs. Hulda Bettex of Los Angeles, California, and another sister, Mrs. Selma Mueller, of St. Louis.

Dr. Haeberle is deeply missed by many sincere friends in the profession, his many long time patients and his family.—C. H. S. in the *Weekly Bulletin* of the St. Louis Medical Society.

#### OTTO SUTTER, M.D.

Otto Sutter, St. Louis, physician, surgeon and hospital superintendent, was born at Sutter, St. Louis County, January 24, 1863. The postoffice was named for his father, John Sutter, pioneer in the development in the west St. Louis area, now within the confines of University City.

Dr. Sutter attended the public schools of the county until 11 years of age, then he entered the St. Louis grammar schools. After obtaining a good education, he served an apprenticeship in the drug business and then graduated from the St. Louis College of Pharmacy in 1884 with the degree of Ph.G. In the same year he became chief druggist of the City Hospital and in the later part of that year purchased a drug store at 19th and Benton Streets which he conducted successfully until 1888.

The years from 1888 to 1892 were spent in the study of medicine and on March 8, 1892, he received the degree of Doctor of Medicine from the Beaumont Hospital Medical College in St. Louis. He engaged in the general practice of medicine in 1895 when he was appointed by Mayor C. P. Walbridge to the superintendency of the St. Louis City Hospital as successor to Dr. W. L. Blichahn. It was during his tenure of office that the cyclone of 1897 practically wrecked the City Hospital and Dr. Sutter was cited for the active part he played in the rescue of patients and the rehabilitation of the institution. As chief executive, Dr. Sutter proved himself a faithful and efficient official, peculiarly well adapted to hospital management. He continued as superintendent of the hospital until 1898 when he resigned to establish a private hospital and to care for his growing practice. His successes were phenomenal and he quickly took his place as one of the city's foremost sur-

geons. He had a tremendously magnetic personality which, coupled with a brilliant and studious mind, kept him at the peak of his profession.

Dr. Sutter belonged to the staffs of the Evangelical, Deaconess and Lutheran hospitals. He maintained offices in the Century Building until about 1910 when he moved to the Frisco Building. In the year 1936, he took his nephew, Dr. Richard A. Sutter, as his associate, but death carried him away on the first anniversary of the association, August 1, 1937, at his home in University City.

Another of the few remaining great links between the old and the new in surgery in St. Louis has passed with his death.—H. G. L. in the *Weekly Bulletin* of the St. Louis Medical Society.

#### HENRY C. KLOEPPER, M.D.

It is my privilege and honor to pay tribute to our former member, Dr. Henry Charles Kloepper, St. Louis, who was a native St. Louisian, born of humble German parentage on August 11, 1881. His early education was obtained in the St. Louis public and parochial schools of the Lutheran faith.

At the age of 12 years, his parents moved to a farm in Southern Illinois where he continued his education. At the age of 17 years he returned to St. Louis, finding employment as a drug clerk, and became a registered pharmacist in 1902. Continuing his education, he enrolled in the Marion-Sims Medical College, now St. Louis University School of Medicine, receiving his degree in medicine in 1907. Following the completion of his medical education, he served as intern at the St. Louis City Hospital from 1907 to 1908, and as assistant resident physician from 1908 to 1909.

In 1909, Dr. Kloepper established an office at Broadway and Chippewa Streets where he continued in the practice of medicine until his untimely death August 6, 1937.

After one year in practice, he became the resident physician for the Salvation Army Rescue Home and continued in this capacity until 1919. During this same period he served as assistant in dermatology at the American Medical College for three years. It was about this same time also that he received his appointment to the Lutheran Hospital medical staff, which institution he served loyally until his death.

Dr. Kloepper's life was spent in service both to his fellow men and to his family. His charities were many and varied and were carried on with no thought of reward or publicity. Having had the pleasure of knowing him for many years, I found him to be a man who commanded the respect and admiration of all who knew him.

In the passing of Dr. Kloepper, the medical profession has lost a conscientious and valued member, and the family a devoted husband and father.

Dr. Kloepper is survived by his widow, a son and two daughters.—J. L. H. in the *Weekly Bulletin* of the St. Louis Medical Society.

J. F. Bredeck, G. O. Broun, T. C. Hempelmann, J. F. McFadden and H. I. Spector, St. Louis (*Journal A. M. A.*, July 2, 1938), present the results of three follow-up studies of the patients surviving the 1933 St. Louis epidemic of encephalitis. The mortality, including deaths since the epidemic subsided, was 18.7 per cent. Of 331 patients reexamined, 141 felt as well as before the attack of encephalitis and seventy-nine reported their health improved. Therefore, a total of 66 per cent felt that they had experienced no impairment of health as a result of the disease. Only twenty-two patients, or 6½ per cent, felt that they were physically unable to resume their previous occupation.

## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.  
Perry County Medical Society, December 4, 1937.  
Ste. Genevieve County Medical Society, December 14, 1937.  
Camden County Medical Society, January 7, 1938.  
Webster County Medical Society, January 7, 1938.  
Montgomery County Medical Society, January 14, 1938.  
Dent County Medical Society, January 21, 1938.  
Miller County Medical Society, February 8, 1938.  
Moniteau County Medical Society, March 11, 1938.

ASSOCIATE EDITORS: COUNCILORS OF THE  
TEN COUNCILOR DISTRICTS

#### FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR

##### Buchanan County Medical Society

The Buchanan County Medical Society met at the Missouri Methodist Hospital at 8 p. m., June 1, with the president, Dr. G. T. Bloomer, presiding. Thirty members were present.

Cards of acknowledgment for the flowers sent at the deaths of Drs. W. C. Proud and Ellis Fischel were read.

Dr. James O'Donoghue reported that the Cancer Clinic was receiving patients and that, as suggested by Dr. Fischel, the number would be limited at first and full capacity would be received gradually.

Dr. Cabray Wortley reported that the program committee was planning the annual "June-Get-Together-Society-Auxiliary-Party" to be held at the Country Club, the date to be announced later.

Dr. S. Earl Senor reported that the cataloguing and classification of the medical library was progressing satisfactorily. He also discussed the bill that is now before Congress authorizing the construction of a new building to house the Army Medical Library and Medical Museum at Washington, D. C.

Dr. W. T. Elam reported on the joint activities of the committee on state medicine with the members of the social service committee in an effort to work out a satisfactory method of staffing indigent services under the Social Security Act.

An amendment to the by-laws which was presented by Dr. James O'Donoghue at the April 6 meeting creating a committee to be in charge of the Cancer Clinic at the St. Joseph State Hospital is as follows:

The Buchanan County Medical Society Cancer Committee shall consist of eight members of the Buchanan County Medical Society. This Committee shall assume full responsibility for the management of the State Cancer Clinic at the St. Joseph State Hospital and shall be empowered to act in all matters pertaining to the Clinic, subject to the approval of the State Cancer Commission.

At the time of his installation the President of the Buchanan County Medical Society shall each year (1) Appoint two members of the Society as members of the Buchanan County Cancer Committee; and (2) Remove two members of the Cancer Committee after they have served a four year term on the Cancer Committee; provided that in 1939, 1940 and 1941, the President of the Society shall remove two members of the Cancer Committee without them having served a four year term and appoint their successors; (3) Appoint members to the Cancer Committee in the event of vacancies by resignation or death or otherwise.

After discussion by Dr. O'Donoghue the amendment was voted upon and passed unanimously.

The following members were appointed to the Cancer Committee: Drs. Gregg Thompson, chairman (1942); Floyd H. Spencer (1942); James O'Donoghue (1941); W. J. Hunt (1941); O. Earl Whitsell (1940); S. Earl Senor (1940); J. H. Ryan (1939), and H. W. Carle (1939).

Dr. Cabray Wortley and Dr. E. E. Wadlow presented the following amendments to the by-laws:

1. Amend Chapter 2, Section 1, to read as follows:

The regular meetings shall be held in St. Joseph, Mo., on the first Wednesday in each month, except that the meetings in July and August may be held or not at the discretion of the Council of the Society.

2. Amend Chapter 3, Section 1, to read as follows:

The officers of the Society shall be elected at the regular December meeting in each year, except the election of alternates who are to be appointed by the President at the State Meeting if the delegates do not register.

3. Amend Chapter 4, Section 1, by adding the following:

The President shall be reimbursed not to exceed \$25 for expenses incident to attendance at the Annual Meeting of the Missouri State Medical Association.

4. Amend Chapter 4, Section 6, by adding the following:

The delegates shall be reimbursed for their expenses not to exceed \$25 each for attendance at the Annual Meeting of the Missouri State Medical Association.

Dr. W. T. Stacy presented the following amendment to the by-laws:

Amend Chapter 2, Section 5, by substituting the word seventeen for the word twenty-one, making the amended section read:

Seventeen members shall constitute a quorum at any regular or special meeting.

The following amendments to the by-laws were presented by Dr. W. T. Elam, chairman of the joint committee on state medicine and social service:

Amend Chapter 8, Section 2, by adding the following:

General Staff Executive and Supervisory Committee consisting of twelve members.

Add a new section to Chapter 8 to be known as Section 12 defining methods of appointment, size and duties of General Staff Executive and Supervisory Committee.

It was moved by Dr. W. T. Stacy, seconded by Dr. Cabray Wortley and carried, that the Society approve the film "The Birth of a Baby."

Dr. W. Roger Moore moved that all children under 16 years of age wishing to view the picture must be accompanied by their parents.

Dr. S. Earl Senor was unanimously elected to the board of trustees to serve the unexpired term of Dr. Daniel Morton.

Drs. Ira D. Kimes and J. F. Chiarottino were unanimously elected to active membership. Dr. Ralph Kuhlman was unanimously elected to provisional membership.

The meeting adjourned at 9:30 p. m.

O. EARL WHITSELL, M.D., Secretary.



**SECOND COUNCILOR DISTRICT****H. B. GOODRICH, HANNIBAL, COUNCILOR****Lewis-Clark-Scotland Counties Medical Society**

The Lewis-Clark-Scotland Counties Medical Society was called to order at 7:30 p. m. at the office of Dr. J. R. Bridges, Kahoka, by Dr. H. B. Goodrich, Hannibal.

The question of hyphenating the three county societies into one society was thoroughly discussed. Approval of the hyphenation was voted unanimously by all present at the meeting.

Dr. W. J. Sullivan, Kirksville, medical director of Unit No. 10 of the State Board of Health, outlined the proposed program of the Board. This program was discussed and a sincere desire to cooperate was expressed.

Dr. Goodrich discussed matters pertaining to the State Association and particularly stressed the importance of individual members of the component societies contacting their representatives in regard to proposed legislation.

It was decided to hold the next meeting on August 12 with Dr. O. F. Bradford as guest speaker. This will be held in conjunction with the pediatric lectures to lay groups which are being carried on by the Board of Health in cooperation with the State Medical Association's Committee on Maternal Welfare and Infant Care.

The following officers of the hyphenated Society were elected: President, Dr. J. R. Bridges, Kahoka; secretary-treasurer, Dr. H. G. Pudleiner, Canton; vice president from Clark County, Dr. J. L. McConnell, Revere; vice president from Lewis County, Dr. P. W. Jennings, Canton; vice president from Scotland County, Dr. E. E. Parish, Memphis.

Those present at the meeting were Drs. J. R. Bridges, Kahoka; H. W. Harris, P. W. Jennings, H. G. Pudleiner, Canton; A. H. Lillard, LaBelle; P. M. Baker, E. E. Parish and A. E. Platter, Memphis; F. M. Johnson, Gorin; W. D. Pipkin, Monroe City; W. J. Sullivan, Kirksville, and H. B. Goodrich, Hannibal.

H. G. PUDLEINER, M.D., Secretary.

**FIFTH COUNCILOR DISTRICT****WILLIAM A. BLOOM, FAYETTE, COUNCILOR****Cole County Medical Society**

The Cole County Medical Society met June 1 at St. Mary's Hospital, Jefferson City.

Drs. L. W. Dean and Louis J. Birsner, St. Louis, of Washington University, were guests of the Society. Dr. Dean spoke on "Acute Rhinopharyngitis and Acute Nasal Sinus Infections in Infants and Young Children," and Dr. Birsner talked on "The Spread of Infections From the Ear, Nose and Throat Mucosa to the General Circulation."

Before the lectures a splendid dinner was served to a large number of physicians from central Missouri in the St. Mary's Hospital, the Cole County Medical Society being host.

After the lectures there was a round table discussion, the meeting lasting well into the night because of the lively interest taken. All expressed appreciation of the lectures.

**Meeting of June 22**

On June 22 the State Board of Health, St. Mary's Hospital and the Cole County Medical Society had as guest Dr. Reuben L. Kahn of the University of Michigan, the originator of the Kahn test. A large audience of physicians and laboratory technicians of central Missouri attended, including physicians and technicians from St. Louis, Springfield, Columbia, Fulton, California, Versailles and Boonville.

After a noon luncheon Dr. C. F. Adams gave a brief history of the development of the serum reaction tests,

especially for syphilis, and then introduced the guest speaker.

Dr. Kahn's lecture, "Paradoxical Serum Reactions in Syphilis," was excellent. Dr. Kahn is a great teacher. He has the excellent ability to present his subject in plain, clear statements so all can understand. Dr. Kahn's lecture was discussed briefly by Drs. R. N. Ziegler and M. Pinson Neal, Columbia.

After the noon meeting Dr. Kahn, with the aid of Dr. Adams and his laboratory technicians, held a round table discussion in the state laboratories in the Capitol. All expressed appreciation for this visit of Dr. Kahn.

JAMES A. HILL, M.D., Secretary.

**SEVENTH COUNCILOR DISTRICT****E. P. HELLER, KANSAS CITY, COUNCILOR**

The American Medical Association's study of "Need and Supply of Medical Care" got off to a flying start in Jackson County in the latter part of May. At this time, in excess of 60 per cent of the questionnaires directed to individual members of Jackson County Medical Society have been filled out and returned. The returns on the eight additional forms of the survey exceed a 75 per cent return.

A great deal has been said regarding the importance of obtaining accurate statistical data from the individual physician and the other units and facilities having to do with the supply of medical care in the United States. Reports coming in from other county medical societies in Missouri, and elsewhere, indicate that considerable difficulty is being encountered in obtaining the questionnaire from the individual physician. It cannot be too strongly emphasized, in view of results that are being brought out by the American Institute of Public Opinion, various agencies of the Federal Government and others, that it is extremely necessary at this time for the medical profession itself to develop accurate up-to-date information as to the true condition pertaining to medical and hospital care of the indigent and those in the lower income brackets.

The Medical Business Bureau has been in operation for ten months and within that time it has been successful in collecting over \$4500 on the accounts that have been referred. Of this amount, over \$3000 has been paid to the doctors. One hundred ninety members of Jackson County Medical Society have referred accounts for collection. Also several members have used the services of the Bureau in obtaining credit information on patients. In several instances this has provided information that warned them to handle the patient's account on a cash basis and on other occasions the information has indicated that the patient had a satisfactory credit record and presumably would arrange for prompt payment of the account.

The results of the Bureau's work have definitely proved that there is a need for such an organization under the supervision of the county medical society, not only to obtain collection of accounts and to assemble credit information but also to provide for the physicians' other services for their use in the business side of medical practice. The article, "Collecting Medical Fees," beginning in the May 14, 1938, issue of the *Journal of the American Medical Association*, explains the advisability of using the services of the professionally controlled bureaus.

When the physician notices that the collections on his accounts have decreased and articles in the daily press indicate that unemployment is increasing, he should look toward the business side of medical practice and use the facilities of the bureau that are provided for the benefit of the physicians to obtain a better financial return for his medical services to the patients that are able to pay for medical care.

## TENTH COUNCILOR DISTRICT

E. J. NIENSTEDT, SIKESTON, COUNCILOR

### Cape Girardeau County Medical Society

The Cape Girardeau County Medical Society held a dinner meeting at the Colonial Tavern, Cape Girardeau, June 13.

Dr. W. T. Pride, Memphis, Tennessee, was a guest of the Society.

Dr. D. H. Hope, Cape Girardeau, presided. Others present were: Drs. J. W. Berry, H. L. Cunningham, D. B. Elrod, G. J. Tygett, P. B. Nussbaum, M. H. Shelby, J. H. Cochran, C. T. Herbert, H. V. Ashley and W. F. Oehler, Cape Girardeau; Edward Crites, Sedgewickville; U. P. Haw, Benton; D. I. L. Seabaugh and A. M. Estes, Jackson; F. E. Jones, Gideon; R. E. Harland, Ironton; E. J. Nienstedt, Sikeston; S. E. Mitchell, Malden; A. E. Lee, Illmo; A. F. Barnett, P. M. Nations, C. D. Nobles, Anna, Illinois, and L. E. Wallace, Thebes, Illinois.

A duplicate charter received from the State Association Secretary was presented and a motion carried to have the document framed and cared for by the secretary.

A bulletin from the Committee on Maternal Welfare was read. Action was ordered postponed to a special meeting because of lack of time.

Applications from membership were received from Dr. E. R. Schoen, Jackson, and Dr. W. A. Schoen, Cape Girardeau.

Dr. W. T. Pride spoke on "Some Obstetrical Problems" and illustrated his lecture with lantern slides showing difficult positions and uterine contraction rings. The lecture was instructive and practical. Considerable discussion followed. After close of the program Dr. Pride was given a standing vote of thanks.

A stereopticon, purchased on approval, was used for the first time. After the lecture approval of the lantern was expressed and a motion carried ordering the lantern purchased.

### Meeting of June 29

The Society met on call June 29 at Cape Girardeau at the Colonial Tavern at 8:30 p. m.

In the absence of the president and vice president, Dr. G. J. Tygett, Cape Girardeau, was appointed to serve as chairman. Other members present were Drs. A. M. Estes, Jackson; H. V. Ashley, D. B. Elrod, C. T. Herbert, W. F. Oehler, O. L. Seabaugh, C. A. W. Zimmerman, and W. A. Schoen, Cape Girardeau.

The secretary presented the literature he had on "Conduct of Study of Medical Care."

Dr. C. T. Herbert moved that a committee on medical economics be appointed by the president and that this committee promptly handle the problem. Dr. Oehler seconded the motion which carried.

The secretary reported that he had been interviewed by Dr. E. R. Schoen who had been approached by Miss Wood, assistant to the County Extension Agent, at the instigation of Dr. E. M. Bryan, district health agent, to ascertain the attitude of the Society toward the following plan: Dr. Bryan intends to vaccinate certain government employees (CCC enrollees) gratis. Then he proposes to vaccinate all other people in the county against smallpox and diphtheria, charging 10 cents for the first and 30 cents for the second.

Vigorous opposition to the last half of this plan was voiced by everyone present. It was pointed out that Dr. Bryan, immediately upon his entrance into the district to treat syphilis, was accused of bringing an opening wedge to state medicine.

Dr. Oehler moved, and the motion carried, that the Society go on record as not approving Dr. Bryan's encroachment on the general population with any of his work.

Dr. Herbert moved that the secretary write a strong

letter condemning this plan to neighboring secretaries and send a copy of the letter to Dr. Bryan. Dr. Seabaugh seconded the motion which carried.

A copy of the "Plan for Postgraduate Clinical Conferences and Health Education for Lay Groups" was presented. The secretary reported that Miss Wood had secured meeting places on the assigned dates. He added that he would secure a meeting place for the medical group.

The last matter taken up was "The Mothers Health Finance Bill to Finance Motherhood and Health." On cursory examination the bill appeared so preposterous and accompanying inclosures smacked so of a racket that the matter was ordered referred to the committee on economics for close examination.

C. A. W. ZIMMERMANN, M.D., Secretary.

### Perry County Medical Society

The Perry County Medical Society was called to order by the president, Dr. J. J. Bredall, at his office, Perryville, at 8:30 p. m. on July 8.

During the months of April and May lectures were conducted in most of the towns in Perry County by the physicians of Perry County on the subject "Maternal Welfare and Venereal Disease." Lectures were given as follow: April 7, Dr. Koon, at Biehle, 68 attending; April 20, Dr. Carron, Belgique, 106 attending; April 25, Dr. E. M. Bryan, Perryville, 68 attending; April 29, Dr. Bredall, Longtown, 60 attending; April 28, Dr. Bailey, Brewer, 60 attending; May 8, Dr. Bailey, Yount, 21 attending; May 4, Dr. Fischer, Farrar, 60 attending.

The duplicate charter of the Perry County Medical Society was framed and placed in the City Library as a place of permanent keeping.

The Society unanimously voted in favor of the proposed city bond issue to be voted on in August for constructing a city owned sewer system and disposal plant.

A letter was read from the State Cancer Commission stating the working facilities of the hospital at Fulton and manner in which indigent cancer patients are admitted to the hospital.

The secretary was instructed to complete arrangements for the lectures to be given in Perryville to lay persons on maternal welfare and infant care.

O. A. CARRON, M.D., Secretary.

## WOMAN'S AUXILIARY

### WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

#### 17th Annual Meeting, St. Louis

President, Mrs. C. C. Tomlinson, Omaha, Nebraska.  
President-Elect, Mrs. Rolla K. Packard, Chicago.

### WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

President, Mrs. Herbert L. Mantz, Kansas City.  
President-Elect, Mrs. Paul F. Cole, Springfield.

Most of the auxiliaries do not meet during the summer months except for an occasional picnic but the officers and chairmen are busy with plans for next year. Particularly timely are the suggestions of Mrs. C. H. Werner, St. Joseph, retiring president.

1. Stress the membership slogan, "Every Eligible Woman a Member."
2. Continue essay contest and have physicians ad-



dress student assemblies on health subjects, especially where no contest is possible.

3. Every auxiliary to have an adviser from its medical society.

4. Every auxiliary to have a yearbook. There are four more than last year.

5. Legislative and economic problems of the profession be studied at auxiliary meetings and book reviews on books concerning the profession.

6. Each county auxiliary to have at least one public relations meeting. Nineteen of the twenty-one auxiliaries did this last year.

7. All auxiliaries to sponsor *Hygeia* and read *Hygeia*.

8. Continue mailing *Bulletin* direct to members.

9. State program chairman to suggest more than one topic since not all groups are interested in the same subject.

10. Yearly report to be sent to the medical society.

11. The Handbook be used frequently.

The National Convention in San Francisco was attended by 1006 officers and delegates who enjoyed the program. There were many enjoyable social affairs and side trips to nearby places of interest. The reports of the state presidents showed gains in membership and the number of public relations meetings held. The auxiliary can do much to aid the American Medical Association in its opposition to the possibility of the political control of medicine and at the suggestion of Dr. Irvin Abell, Louisville, a resolution was passed asking the auxiliaries to organize study groups "to be concerned with the dissemination of accurate knowledge concerning the harmful effects of present social and economic movements upon the practice of medicine." Missouri had a fine report with its gain of sixty members and eighty public relations meetings with an estimated attendance of from eight to nine thousand people. Missouri was well represented at the convention having its quota of ten delegates and many visitors. Mrs. Herbert L. Mantz, Kansas City, president of the Missouri Auxiliary, acted as secretary to the convention. She remained in California several weeks visiting friends and relatives.

Mrs. C. C. Tomlinson, Omaha, was installed as president and Mrs. Rolla K. Packard, Chicago, was chosen president-elect. An account of the convention appears in the July issue of the *Quarterly Bulletin* which has been mailed by a committee of the Jackson County Auxiliary under the direction of Mrs. Marvin L. Bills.

## BOOK REVIEWS

**THEORETICAL PRINCIPLES OF ROENTGEN THERAPY.** Edited by Ernst A. Pohle, M.D., Ph.D., F.A.C.R., Professor of Radiology, Chairman, Department of Radiology and Physical Therapy, University of Wisconsin, Madison, Wisconsin. Foreword by W. Edward Chamberlain, B.S., M.D., F.A.C.R., Professor of Radiology in the Temple University School of Medicine, Philadelphia, Pa. Illustrated with 132 engravings. Philadelphia: Lea & Febiger. 1938. Price \$4.50.

This is a most interesting and widely useful book. It not only should be useful to the radiologist but also to the student and research worker. The book covers the basic facts of the physics of roentgen therapy and includes most important chapters on dosage, normal and abnormal tissue reactions and, last but not least, gives methods of protection including the safety rules adopted by the international committee on radiation. Dr. Pohle has been most ably assisted by Drs. R. R. Newell and

Francis Carter Wood, and by physicists Wilhelm K. Stenstrom and Lauriston S. Taylor, and it is the opinion of the reviewer that they have compiled a most valuable book on the basic principles of radiation.

C. E. V.

**THREE YEAR SUPPLEMENT TO NEW MODERN DRUGS.** A presentation of the important new medicinal preparations described in the quarterly index, *New Modern Drugs*, 1935 to 1937, inclusive, together with descriptions of additional drugs which have not been previously published. By Jacob Gutman, M.D., Phar.D., F.A.C.P., Director, Brooklyn Diagnostic Institute. The American Journal of Surgery, Inc., New York. 1938.

In 1934 Gutman's "Modern Drug Encyclopedia and Therapeutic Guide" was published. Since then a quarterly pamphlet "New Modern Drugs" has appeared every January, April, July and October. All the newer preparations which have been described in this quarterly during 1935, 1936 and 1937 are in the "Three Year Supplement to New Modern Drugs."

There are seven chapters; namely, "Drugs," "Endocrine Preparations," "Hypodermic Medicaments," "Biologicals," "Allergens," "Foods" and "Miscellaneous Products." The preparations are arranged alphabetically in each chapter and the descriptions, statements, analyses and other information are given without change or remarks as found in standard works and references. Composition, action, uses, supply, administration, cautions and other data are presented in a fashion which makes it a splendid work for rapid reference. In most instances a bibliography is included. The products of about one hundred manufacturers may be found in the book which will eliminate the trouble and fuss of searching among the many brochures, reprints and circulars which clutter up the desk or fill boxes and drawers of almost every doctor's office. Here we have a means of ridding ourselves of that bulk of advertising literature and promptly finding the special knowledge when we need it.

With the "Encyclopedia" it provides a quick reference service to over eight thousand products of three hundred and fifty manufacturers.

R. E. S.

**PRACTICAL BACTERIOLOGY, HAEMATOLOGY AND ANIMAL PARASITOLOGY.** By E. R. Stitt, M.D., Sc.D., LL.D., Rear Admiral, Medical Corps, and Surgeon General, U. S. Navy, Retired; Paul W. Clough, M.D., Chief of Diagnostic Clinic, Johns Hopkins Hospital, etc., and Mildred C. Clough, M.D., Formerly Fellow in Bacteriology and Instructor in Medicine, Johns Hopkins University. Ninth edition. Philadelphia: P. Blakiston's Son and Company, Inc. 1938. Price \$7.00.

This is the ninth edition of Admiral Stitt's well-known book. The reviewer has seen every edition of this book from the very beginning and has seen a constant improvement in its character. It was originally, in his opinion, the best book on the subject at the time of its appearance and with its improvement year after year it has always been for him a most useful book in his library.

The present work has been made thoroughly up-to-date and now comes out with the assistance of Drs. Paul W. Clough and Mildred C. Clough, both of Johns Hopkins University. It is difficult to point to any one particular part of the book as outstanding because the entire book is authoritative. Admiral Stitt's object, of course, has always been thoroughness in teaching, particularly in hematology and tropical medicine.

In all respects this is a worth while laboratory manual and should be in the library of those who want to have the last word on this subject.

R. B. H. G.

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### MEDICAL PARTICIPATION IN A PUBLIC HEALTH PROGRAM

T. R. MEYER, M.D.

CLAYTON, MO.

Each year public health becomes more and more a summation of personal health. When citizens of communities realize that diphtheria, smallpox, tuberculosis and typhoid fever are communicable diseases and that they can be prevented, we find the respective educated areas enjoy lower death rates from these causes.

The department of health of the State of New York has as its slogan, "Public Health Is Purchasable." A health commissioner should be considered a community servant who offers preventive medicine, preventive nursing and preventive sanitation for sale. Some people are of the opinion that public health is a marvelous thing to possess but they expect to receive it free like the gentle rain from heaven and, of course, they have been educated that by passing the filling stations they can obtain free air and free water. Little do they realize that the statement, "Public Health Is Purchasable," is based upon the fact that the amount of public health service is dependent upon the size of the budget that is made available to a department of health.

If we are to have healthy communities, we must first have healthy individuals that dwell therein. It is, therefore, evident that the effectiveness of the administration of a public health program definitely becomes more and more a matter of personal hygiene.

The earlier public health activities were more or less of a spectacular nature. During exciting periods of epidemics when fear and panic would overtake the citizens of a community, the service of a department primarily dealt with drastic methods in handling such outbreaks. One would find always a receptive population to assist the department of health in effecting any procedure or measure that held forth any sign of relief. When the emergency was over, usually it was difficult for a department or health officer to obtain the general cooperation

of the citizens of the community in formulating constructive public health programs and practices.

#### HEALTH DEPARTMENT AS AN EDUCATIVE INSTITUTION

In the early inception of health departments in the United States, health officials were vested with tremendous police authority; and, while this undoubtedly resulted in programs of municipal cleanliness and fortunately the disposal of human excreta with a corresponding increase in water supply supervision and construction of extensive sewer systems with a resulting diminution in typhoid and other filth borne diseases, there really was no marked decline in the prevalence of other communicable diseases such as diphtheria, scarlet fever, measles and pneumonia. While the early American health department utilized its vast and extensive police power in its program against insanitary conditions, the public health official of today must have as a part of his armamentarium a well organized program of health education in which the family physician, layman and the health commissioner must participate. The educative approach of a modern health department through every avenue of community interest is a marked contrast to the earlier method of force.

There have been numerous individuals in social and public health work that felt that every child was the property of the state and that the social worker and the health officer should control their destiny from utero through the university. On the other hand, in the last few years there have come to exist some public health officials (and I am proud that I am in this category) that feel that many of the medical services, which have become in some programs an integral part of the health department, should be rapidly transferred to the offices of the family physician and that a program of this kind, utilizing the family physician, will affect more community interest with resultant dividends in financial economies and longer spans of life.

#### ST. LOUIS COUNTY HEALTH DEPARTMENT REORGANIZED

In June, 1936, the plan for reorganization of the St. Louis County Health Department was undertaken by the County Court and the State Board of

Read at the 81st Annual Session of the Missouri State Medical Association, Jefferson City, May 2-4, 1938.  
Deputy State Commissioner of Health.



Health. The court had no ideas on the matter; a previous survey in the form of an inventory had been made and they realized that it was time to place their house in order.

There were numerous candidates for the position as Director of Health but the United States Public Health Service had made certain recommendations as to qualifications of personnel and the County Court intended to live up to those suggestions.

In passing, one might remark that there was considerable opposition to my appointment which came, interestingly enough, from my own profession. First, I was an outsider (not a citizen of the state); second, the medical profession had experienced and read of the encroachment of public health in the medical field and there was justly the questioning of "What now? What to expect next?" The appointment was finally made of a health officer with a philosophy acceptable to the medical practitioner as well as to the community, a man who had always been identified with organized medicine and who held honorary membership in medical societies in the various states where he had worked.

It is my belief that many of the public health practices belong in the office of the family physician; and it has been the aim of our program in St. Louis County to accomplish this end as rapidly as possible. The program is now on its way and, it is believed, is headed in the right direction. I will outline briefly the reorganization steps taken in St. Louis County.

The Health Commissioner was to receive \$1000 in salary from the county authorities. He immediately asked for an audience with the county medical society, outlined his plans, asked for a public health committee from the society and took the \$1000 he was to receive and divided this amount between two medical part-time assistants selected by the society from the rolls submitted by its public health committee. This was accomplished by the Commissioner requesting the County Court to reduce his salary to \$1 per annum and to appoint the two medical assistants recommended by the public health committee of the society. From that original step the charted course of the program with organized medical support was underway.

The next major pivotal point came on January 1, 1937, when the County Court of St. Louis County, courageously continuing in its stand that the house must be placed in order, selected as superintendent of the St. Louis County Hospital a trained, experienced, qualified administrator, Dr. Curtis H. Lohr, whose career in hospital administration and whose attitude toward organized medicine were well known. The cooperation of such a man in planning to care for the community health needs has been invaluable to the Health Department.

What does this have to do with public health participation and administration? "Plenty" is the answer, as here was the foundation of the health center plan, teamwork, cooperation, expenditures from a common public fund, to the end result of promoting

the health, happiness and welfare of the citizens of St. Louis County.

The health program has been pushed forward with remarkable rapidity, thanks greatly to the thoughtful cooperation of the hospital superintendent, Dr. Lohr. The administrative offices of the Health Department are located in the County Hospital and proximity promotes teamwork between the two commissioners. A higher degree of efficiency with a resultant economy to the taxpayer is effected through the elimination of duplication of services in roentgen ray, laboratory, outpatient clinic services and in the special Health Department services in maternity hygiene and control of communicable diseases such as venereal disease, tuberculosis and rabies. The joint planning and sharing of responsibilities is proving of mutual advantage to the programs of the Health Department and the Hospital.

The next step was mapping the program, keeping in mind the medical practitioner as a participating agent and a major factor contributing to the health of the public. Time prevents a complete report of the program accomplishments in this direction. I shall outline only some phases of the program and their relationship to the family physician; namely, school program, immunizations, rabies control, biologicals, laboratory and maternity hygiene.

#### SCHOOL PROGRAM

Before school sessions were resumed in October, 1936, the Medical Society had been approached on the question of a plan for school examinations. This brought forth considerable discussion as to the value and technic of such examinations in the past.

The Health Commissioner made suggestions which were endorsed by the Society and carried out in 1936, 1937 and 1938, the high lights being as follow:

1. Immediate transfer of examination of school children from the schools to the family physician's office.

2. Change of the term *physical examination* to *medical examination*.

The public has been educated to receive no end of free services from the school. Why should people be educated in this direction? The sooner we get away from this idea, particularly on an important personal matter such as a medical examination, the sooner the public will receive better results from health programs.

In the stereotyped public health program a major activity has been school physical examinations. (They should never be called examinations; at the best the term "inspections" is rather ambiguous.) For the most part they have been casual superficial once-overs run like an endless belt or conveyor with parents not present and followed by the usual notification to the parent: "Dear Mrs. Smith: Please be advised that Robert was examined this day by the Specialist from the Health Department.

The following defects marked with a cross were found. We suggest that you send him to your doctor for correction of these defects."

Results of the stereotyped school examination program have been poor.

1. A review of the statistics reveals that only 2 per cent or 3 per cent of the defects have ever been corrected by this procedure. If one were to reexamine the children from this year's third grade in the fourth grade next year one would find in about 95 per cent not only the same old defects but new ones in addition.

2. Then when the 2 per cent or 3 per cent of the conscientious parents go to the family physician as a result of the examination and tell the man who got up one cold December morning to deliver Robert (and probably knows Robert better physically than anyone else) that the specialist (a specialist is anyone who is one hundred miles away from home) from the school or health department said "So and so" no wonder the family physician blows up. Should he say anything contrary to the report, confusion results; and this confusion does not enhance the respect of the public for the medical profession.

3. The success of any examination of small children is dependent upon the parent being present in order that the family physician might discuss with the parent the findings of the medical examination and their corrective procedures. This has not been successfully carried out in the stereotyped school program.

You will notice that the term "medical examination" has been used throughout. Why? The term "doctor" to some people might mean osteopath or chiropractor. Many people, including the nurse or the physical education teacher, might think themselves capable of making an examination which they might term "physical examination." Therefore we do not use the term but call the examination a medical examination which only physicians (M.D.s) are eligible to make.

In any good public health program, certainly in the St. Louis County program, nurses are careful that they do not practice medicine and any semblance of such means *finis la job*. No nurse in our department can immunize, vaccinate or carry on any procedure encroaching or bordering upon the prerogatives of a physician.

What then is our school program in St. Louis County?

Through the cooperation of the county medical society, 143 physicians have gone on record agreeing to make medical examinations of school children in their offices at designated hours without cost.

Now instead of making thousands of hasty inspections we are offering the entering school child an examination in the family physician's office. There are various reasons for this the chief one being that at that age children cannot go to the doctor's office alone but must go accompanied by their parents.

The results of last year's examinations reveal that 80 per cent of parents attended. By eliminating the so-called specialist in the stereotyped program and placing the examination in the doctor's office the percentage of correction of defects last year was not 2 per cent but 40 per cent.

This examination, while without cost, has resulted in the first two years in (1) educating parents to take the child to a physician's office, a habit which should be established early in life in order to insure proper medical supervision being sought by the individual throughout life; (2) parents paying for the correction as a result of the examination, such as tonsilectomies, glasses, immunizations and circumcisions, and the pay has gone to the family physician. This education of the child to pay for service and to go to the physician's office we believe is right.

#### INVESTIGATION OF ABILITY TO PAY

We do not have to have a complicated R. G. Dun or Bradstreet system to determine indigents. Our nurses are especially well trained. All of them have had some college training; those without degrees are taking evening classes in public health, and social case work in local universities, and nearly 50 per cent of the group have college degrees as well as R.N. certificates and public health training. We use them for investigating home conditions and economic income, but our major source of information for this is the family physician. Were I to go back to my home and take up where my father left off, all I would have to dig up would be his old books and I could find who always was able to pay and who never paid. We leave the chief decision up to the family physician and use the hospital and health department clinics for indigents only, except in acute communicable conditions where immediate control is necessary.

In this connection Dr. Lohr and his social service department, working jointly with the Health Commissioner, have produced blanks to be filled out by all applicants for admission. The affidavit is applicable to the public health program in the following services: (1) rabies, (2) venereal disease, (3) communicable disease, (4) tuberculosis hospitalization, and (5) maternity hygiene. It is evident that the affidavit plus the family physician's signature insures protection against the "charity chiseler." Patients must have the family physician's signature before service is given.

#### IMMUNIZATION PROGRAM

There are certain preventable diseases. A health department must justify its existence and prove its effectiveness in preventing and controlling disease. It is meant by this that if two years elapse after the inception of a full time program of public health and an epidemic of diphtheria or smallpox frequents the area served, there is no justification for expenditure of public funds for health protection.



That does not mean of necessity that a health department should throw open its doors for the promiscuous abuse of free clinics.

The policy of the St. Louis County Health Department in this connection is one of promoting immunizations in the family physician's office through the following procedures: (1) Constantly urging the family physician to render this service and to educate his families to the possibility and need of preventive procedures, especially through service to the newborn babies delivered. (2) Making biologicals available to the family physician if a report on a prepaid postal card is made to the department.

If a department's objective is 10,000 smallpox vaccinations for 1938, why should not the department be gratified to have 5000 or more of those examinations done in the family physician's office? We are supplying the physician with the material and the prepaid card, providing he supplies us with the report.

It is by this plan that we are able to say to public health appraisers that the family physician is doing preventive services in his private practice. There are so many groups ready to say that the family physician will not cooperate and that he will not do the service. The answer to these individuals is, "Here in St. Louis County let's look at the record."

Our system of having nurses deliver permanent birth registration certificates to the family is one of our strongest weapons for getting the patient back to the family physician for follow-up services. Our nurses are instructed to advise parents to ask their family physician relative to vaccination against smallpox and immunization against diphtheria before the child reaches the age of 1 year.

Our clinics (and we have to conduct them for the immunization of indigents) are held daily, not in schools, not in attractive centers that invite the folks who can well afford to pay, but in public buildings. In this way, also, we discourage the "charity chiseler."

All our forms, literature and health education material on immunizations are headed not as of the clinic but as of the office of the family physician.

The two physicians employed as assistants to the Health Commissioner from the County Medical Society are utilized in the morning immunization clinic in the Health Department for immunization of indigents. We use the word "indigent," people who cannot afford to pay, freely in our written and spoken words. These physicians can attest to the absence of abuses in this respect at our clinics.

#### RABIES CONTROL

The department has cooperated with the profession on rabies control. Prior to the present directorship of the department, rabies vaccine cost the family physician so much that, by the time he received from a patient the cost of the product alone

and then justly figured in his rightful fee in giving fourteen or more treatments, the family had too expensive a procedure on its hands.

We have made this product available to the family physician for \$7. And it is gratifying to note the number of preventive rabies treatments that are now being rendered in the family physician's office instead of the previous numbers at the free clinic. In this direction we have bent every effort to maintain the family-doctor relationship. Our form of affidavit at the department again makes the patient cognizant of this relationship. We have records to prove that the number of rabies treatments in the family physician's offices have more than tripled in the last two years.

#### VENEREAL DISEASE PROGRAM

It is ridiculous to state that a year elapses in a health department serving 300,000 people and that reports on venereal cases from the physicians are less than 400. It is only through the cooperation of the profession that a department of health can actually know the venereal disease incidence in the area.

Plans to ascertain this incidence have been made through the following channels: (1) Supplying cards with franked envelopes for reporting cases; (2) reporting to be made by number and not by name, and (3) supplying the necessary therapeutic agents to the family physician for treatment of indigent and borderline indigent cases in his office.

The department further cooperates with the profession through its case investigation and affidavit system outlined for the other services. All venereal patients with the exception of emergency cases in which one or two initial treatments are given must be certified to our clinic by a family physician. For the most part our cases are referred by the family physician in the area.

#### LABORATORY

The laboratory can be of immeasurable value to the profession. We have strengthened ours and made available to the physician certain services for their indigent cases and any service desired on the communicable disease cases. It is not the aim of our program to encroach in any way upon the private laboratory.

#### MATERNITY HYGIENE PROGRAM

Prior to the reorganization of the department, little consideration was given to the family physician in regard to delivery services for indigent or borderline citizens of this county. One must realize that St. Louis County has the County Hospital and the abuses of the hospital in this connection were tremendous.

The new administration was confronted not only with organizing a program but it had a simultaneous difficulty of reorganizing a procedure and breaking down a precedent that was grossly unfair to the medical profession. Early upon the arrival of the Director of Public Health it was found that

many people who could pay in part or even in full for medical services were being received into the hospital for delivery with little consideration of the family physician's relationship to the case and no effort to determine the patient's ability to pay for such service.

The entire program, so far as maternity hygiene was concerned, was in the hands of a person who received more salary and travel expense than physicians or full time nurses in the program. Her only qualification for the position was that she was a committee woman. When a request was made to the County Court to effect efficiency and economy by replacing this lay committee woman by a public health nurse, the court concurred.

Our program now is that every applicant for maternity services at St. Louis County Health Department is immediately investigated, affidavits filled out, family physician's name ascertained and signature of physician procured before services of any kind are begun.

The Director of Health discussed with the public health committee of the St. Louis County Medical Society and later with the entire Medical Society a proposed plan for handling the maternity cases of indigents and borderline indigents for St. Louis County. The plan briefly is as follows:

1. Prompt return of maternity cases to the physician of the families' choice for delivery.

2. A contribution toward the family physician's fee for the delivery of such cases.

3. The inauguration of certain forms and blanks to be filled out by the family physician covering the prenatal, delivery and postnatal services rendered by him. This blank is to accompany his bill to the Health Department when his statement is rendered.

It is realized that the County Court cannot establish a fee to pay a physician for services, but there certainly cannot be any criticism of the County Court giving a contribution to the family physician for such services. This program was worked out with the County Court and has their full cooperation. The object of the report to accompany the blank is to prove that the family physician, who has been accused of not being willing to cooperate in preventive medicine, can complete accurate records on preventive procedures and is willing to do so. It is our answer to the orthodox agencies that maintain that the family physician will never render such services.

The procedure is as follows: (1) Case comes to hospital, (2) social investigation, (3) examination by a physician who is a specialist in his field and approved by the Medical Society, (4) complete laboratory service including Wassermann, (5) maternity kit available containing cotton, gauze bandage, rubbing alcohol, medicine dropper, abdominal pads, aspirin, cotton seed oil, silver nitrate ampoules, white vaseline, ergetrate tablets, boric acid, epsom salts, soap and lysol, (6) case referred to the physician of the families' choice, (7) standing orders, and (8) reports.

Preventive medical services certainly are a purchasable commodity. This commodity depends upon the extended service and the attitude manifested not only by the health department but by the family physician. It is unfortunate that in many communities a certain degree of antagonism and suspicion has come to exist between organized medicine and public health programs. On the one hand organized medicine has frowned upon the real or mythical inroad of socialized medicine while, on the other hand, there have been numerous health officials who have failed to recognize and appreciate the important role that the family physician plays in extending and broadening the community health service.

We have reviewed some of the aspects of a program serving the largest county in the State of Missouri. I believe that sufficient material has been presented to substantiate the idea that public health programs can be organized in such a way that they do not interfere with the privileges and prerogatives of the family physician. It is the aim of our program to utilize the family physician and we appreciate that every physician is a protector of the public health and that the public looks to the physician for advice on matters of health. Countless persons rightfully have unquestioned, unreserved faith in the word of their physician and their ideas and conclusions on public health matters are the attitudes of their family doctor. We value the respect that he commands as an educator.

One thing of which we are convinced is that the organized medical profession can make a material contribution to the improvement of public health. We have found that our program of medical participation in health work is profitable to the physician, the health department and the public. It costs less to prevent than to cure.

In conclusion, I wish to express emphatically to the State Medical Association that they have a friend in Dr. Harry F. Parker, the State Commissioner of Health of Missouri. His background in organized medicine and his relationship with the State Association places in the important position of State Health Commissioner a man who appreciates your problems and stands ready at all times to cooperate with his profession. I solicit your cooperation in making possible an extension of public health service in the State of Missouri and ask that you support the establishment of properly organized and properly personelled county health units which will undoubtedly work whole heartedly in the interest of the medical profession and thus serve the public to maximum advantage.

St. Louis County Hospital and Health Department.

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Using the gravimetric method of Venning, Howard W. Jones and Paul G. Weil, Baltimore (*Journal A. M. A.*, Aug. 6, 1938), studied the excretion of pregnanediol in a case of early pregnancy in which the corpus luteum of pregnancy was removed fifty-eight days after the last menstrual period. Abortion did not take place.



## HERNIA REDUCED EN MASSE

A. DENTON VAIL, M.D.

SPRINGFIELD, MO.

The reduction of a hernia en masse constitutes the displacement of the herniated mass from its usual location to a position which, superficially and at times even on detailed examination, suggests complete reduction; at the same time, however, intestinal obstruction almost invariably follows.

The first case of this kind recorded in the literature was reported by Saviard<sup>1</sup> in 1702 who merely described an unusual case he had observed some years previously. Subsequent cases have been reported as they have occurred with occasional reviews of the subject. Conner and Howitt<sup>2</sup> in 1908 collected 137 cases from the literature. To Pearse<sup>3</sup> belongs credit for the most comprehensive review of the subject to date with a detailed study of 193 cases, covering the entire literature to 1931 and presenting a number of important and interesting statistics.

The reduction of hernia en masse is computed to occur in 0.0075 per cent of all cases of hernia or 1 in over 13,000. Taxis is felt to be responsible in over 95 per cent of all cases. The average age of the patient is 49 years with 69 per cent of all cases falling between the ages of 30 and 60 years. Occurrence predominates in males with 87 per cent, females 13 per cent. It is associated with inguinal hernias in 87 per cent and femoral hernias 13 per cent. Frequency of occurrence on the right side predominates with 64 per cent. The duration of a hernia in these patients has been known for many years, 55 per cent reporting its presence between from ten and thirty years. Inguinal hernias in which this accident occurs carry a mortality of 40 per cent, femoral hernias 70 per cent. Although Nason and Mixer<sup>5</sup> collected five cases, three of which occurred in a group of 632 hernias of all types, it is felt that this series is too small to justify any revision of conclusions as to frequency since Eliason's<sup>4</sup> review of 12,000 herniorrhaphies failed to reveal a single occurrence.

In the usual mass reduction of hernia the hernial mass is displaced from its usual location so that it lies between the parietal peritoneum and those structures with which it is normally in apposition. This has been designated as the properitoneal space. In the great majority of such reductions the sac, together with the contained viscera, is so displaced. Infrequently, however, when an attempt at reduction is too severe, the hernial sac may rupture with only the displacement of the viscera.

There are several conditions any one of which if obtaining may be conducive to the displacement of a hernia to a properitoneal position. As has been pointed out the hernia is usually of long standing and reductions have been made repeatedly, some with greater or less ease, so that with each operation there is a tendency for the sac to become loos-

ened or the neck of the sac to separate from the internal ring. There is also the possibility of a preformed properitoneal space, such as would result from an excessive amount of properitoneal fat, which would offer little resistance to such a displacement. The presence of a congenital properitoneal diverticulum would facilitate such displacement. Occasionally it has been observed that the hernial sac remains fixed in the canal while the contents of the sac are displaced to a properitoneal position. Forceful attempt at reduction of the hernia may cause excessive pressure against the wall of the sac. Although displacement resulting in rupture of the sac is comparatively rare, this condition has been observed. If the rupture occurs in the posterior wall of the sac the viscus may be forced behind the pubis or may come to lie in close proximity to the bladder or even the rectum. A rare condition has been observed in which the sac has ruptured at the neck allowing the return of the loop of bowel to the abdominal cavity but remaining obstructed by the constricting neck of the sac which was torn away.

In the diagnosis of this condition, as with many other problems in medicine, one must rely to a large extent upon the history since local manifestations are frequently misleading or absent. The main features elicited by a carefully obtained history will generally reveal the following order of events:

(A) A hernia is known to have been present for many years during which time it has been reduced easily and at will.

(B) A poorly fitting truss has been worn for approximately the duration of the known hernia.

(C) The last reduction frequently will have been made with more or less difficulty, accompanied by more pain than usual. The patient may or may not have noticed a sudden release of resistance to the reduction.

(D) This operation, while usually followed by the gradual or sudden onset of obstructive symptoms, may result in a temporary period of relief. Two cases have been observed which, after reduction en masse, were followed by free intervals of three weeks and two months respectively before the onset of obstructive symptoms.

Local diagnostic evidence, when present, may appear as a palpable mass in the abdominal wall in the region of the internal ring or in one of the lower abdominal quadrants. A tumor may be palpated proximally in the hernial canal. An examining finger in the rectum may reveal a mass deep in the pelvis. There may be noted, at times, an elevation of the testicle of the same side.

It would appear most logical that in such circumstances there must always be intestinal obstruction of some degree, the dangers and seriousness of which are fully recognized. Unless the possibilities of such occurrence are kept in mind, since the hernia to all appearances may seem to be completely reduced, there is grave danger of minimizing the importance of the situation and to defer interfer-

ence until the patient's chances are either nil or otherwise greatly reduced. Relief by means of surgery should be instituted immediately upon diagnosis.

In view of the unusual features and extreme rarity of this condition it is felt that the following case is worthy of presentation.

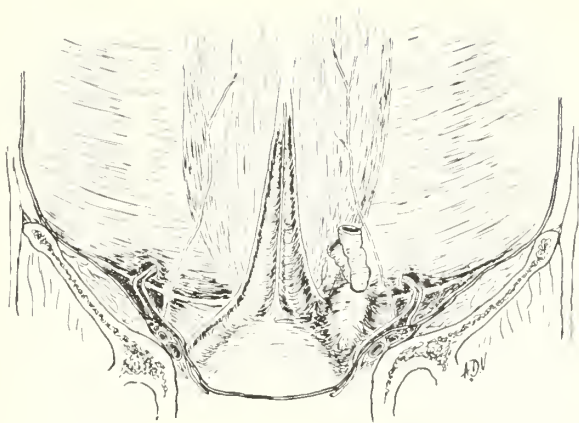
#### CASE REPORT

J. P., a farmer aged 67 years, was admitted to the Springfield Baptist Hospital on November 23, 1935, with complaint of pain in the lower abdomen, nausea and vomiting. For almost twenty years a right inguinal hernia was known to be present and the patient had worn a truss for practically the entire time. Reduction, which was frequently necessary, had always been easily accomplished.

One week prior to admission the hernia became displaced and at that time there was nausea and vomiting which subsided on reduction. The hernia remained reduced until November 22, at which time it was again displaced, accompanied by pain in the right lower quadrant. Reduction of the hernia at this time was immediately followed by a dull epigastric distress which in a few hours localized in the right lower quadrant and was followed by nausea and vomiting. The patient was unable to retain anything by mouth thereafter. Fecal vomiting was never observed.

There was no evidence of dehydration, shock or toxemia. No peristalsis was seen and there was little or no distention of the abdomen. Digital examination of the right inguinal region revealed a definite defect in the canal but no impulse was obtained on coughing. There was marked tenderness in the right lower quadrant and a mass of approximately 3 to 4 centimeters in diameter was palpated below and medial to McBurney's area. This mass was extremely tender, slightly movable and tense. Very little rigidity was noticed on either side. On rectal examination a mass of indeterminate size was palpated at the tip of the examining finger on the right side and was likewise very tender, slightly movable and tense. The temperature by mouth was 98 degrees F., the pulse 96. Laboratory findings were as follows: Hb., 75 per cent; red blood cells, 5,000,000; white blood cells, 11,300, with a differential count of polymorphonuclears 81 per cent, lymphocytes 15 per cent and monocytes 4 per cent. Except for a pus cell count of 1 plus the urinary findings were normal.

Under general anesthesia the abdomen was opened through a right rectus incision. On opening the peritoneum the abdomen was found to contain an amber colored, serous fluid, estimated as being about 50 cubic centimeters in amount. Exploration revealed an opening in the peritoneum of the anterior abdominal wall near the upper right margin of the urinary bladder through which a loop of small intestine protruded anteriorly and had become strangulated (fig. 1). The constricting ring was incised and the strangulated portion of the bowel gently slipped out. This loop measured approximately 8 centimeters in length and was located about 18 inches proximal to the ileocecal junction. This strangulated portion of bowel, including a portion of its mesenteric attachment, showed evidence of marked pressure at the points of constriction, was a deep bluish red color and the serosa was friable and weeping. The gut was warmed with hot saline packs and after about thirty minutes peristalsis was elicited throughout the entire segment. The bowel was replaced into the abdomen. Digital examination of the opening revealed a sac continuous with the abdominal peritoneum, extending retroperitoneally down and posterior along the right margin of the bladder. This pouch was adherent and was not dissected out. Closure of the neck of the sac



was made with running chromic suture. Examination of the other abdominal viscera revealed a few small stones in the gallbladder and the presence of a Meckel's diverticulum measuring about 3 by 2 centimeters, located 10 centimeters proximal to the point of strangulation. Closure of the abdomen was made in the usual manner without drainage.

Recovery was uneventful and the patient was discharged December 3, 1935. At this writing the patient is in good health and examination of the inguinal canal on the affected side fails to reveal any tendency toward recurrence of the hernia.

#### SUMMARY

1. One case of hernia reduced en masse is added to the relatively few so far recorded in the literature.
2. A brief review of the interesting and important statistical data previously compiled, together with the salient features of such accidents is given.
3. The treatment is immediate surgery.

702 Landers Building.

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Maurice L. Blatt, Samuel J. Hoffman and Maurice Schneider, Chicago (Journal A. M. A., Aug. 20, 1938), discuss the twelve cases of rabies admitted to the Cook County Hospital between 1929 and 1937. All proved fatal. The diagnosis in each case was confirmed by necropsy. The incubation period for the patients varied from two weeks to two months. The closer the site of the bite to the central nervous system the shorter was the incubation period. Wounds made by the bites of animals should immediately be cauterized with nitric acid. The Pasteur treatment or one of its modifications should be instituted in accordance with rules outlined and accepted. The twelve persons whose cases are reported died after suffering great agony and might have been saved if adequate prophylactic measures had been instituted immediately. They were admitted to the hospital after having been ill from two to seven days and anywhere from two weeks to two months after they had been bitten by dogs. Stringent enforcement of regulations governing ownership, licensure, muzzling and leashing of dogs would have prevented the bites.



## NONOPERATIVE TREATMENT OF INCIPIENT CATARACT

GROVER H. POOS, M.D.

ST. LOUIS

Any degree of opacity of the crystalline lens is the most frequent abnormality found within the eye. While its surgical aspect has always had detailed consideration, the etiology and medical treatment has received but scant consideration and its efficiency has been doubted by many ophthalmologists.

Because of the loss of vision accompanying cataract the condition was recognized centuries before the era of scientific medicine.<sup>1</sup> The Egyptians, Greeks, Jews and Arabs confused it with hypopyon and inflammatory plastic exudations. The Japanese and Chinese believed the cataract formation was the result of interference with the circulation and hoped to stimulate this by the use of acupuncture, followed by actual cautery.

Therapy today, in scientific medicine, depends upon a thorough investigation of the cause of disease. Shall incipient cataract be considered a challenge to our nonsurgical skill and the patient be advised that nothing can be done until an operation is indicated or shall a more thorough investigation of the etiology and pathogenesis of the cataract be made? It is evident that a cataract is but a local manifestation of a systemic degenerative process which may be brought about, and invariably is, by several causative factors. When we are importuned by those whose usefulness and happiness is threatened by blindness we are willing to try anything that holds out a ray of hope. We must acquaint ourselves with the systemic condition of our patients and the etiologic factors of the disease we are called upon to treat.

First, a general physical and laboratory examination, including urinalysis, metabolism and blood pressure should be made. Second, an investigation of the diet, digestion, constipation, drinking, exercise and habits as well as an investigation of the teeth, tonsils, and sinuses should be made. All systemic conditions as diabetes, nephritis, malaria, hyperthyroidism, electric shocks, exposure to extreme violet radiation, ergot, naphthol and phosphorus poisoning must be taken into consideration.

Sanderson,<sup>2</sup> after approximately fifteen years of experimentation with the nonsurgical treatment of cataract, came to the conclusion that cataract is a result of general deficiency, especially of various internal secreting glands, and any mode of treatment that assists the return to normal of the various body functions also inhibits cataract development. He also saw opacities in the eyes cleared by the removal from the patient's diet of dairy products and eggs and wheat as well as raw foods, and also by the discontinuance of the use of tobacco and various cosmetics.

Murphy,<sup>3</sup> primarily concerned with diet in relation to cataract, is of the opinion that immature cataracts generally recover their former transparency when a nearly correct nutrition is prescribed. He laid stress on the importance of the vitamins in the diet of all persons suffering from a degenerative disease of the lens. To find that Murphy's conclusions are well grounded we need only study ophthalmic conditions in India where cataract is more prevalent among the poorer class than in any country on the globe. Here we cannot escape the conviction that much of the cataract development is the result of insufficient and possibly improper nourishment. Many of the people of India restrict their diet to certain foods, omitting animal proteins almost entirely and certain necessary vitamins are wanting.

McGuire<sup>4</sup> points out that long before the days of ocular microscopy many keen observers, notably Clark and Risly, stressed the idea that cataract in the adult was more or less closely related to uveal tract disease and emphasized the importance of correcting the underlying inflammatory condition in an attempt to arrest the sclerosing process of the lens. He states that recent studies of the crystalline lens by means of the ocular microscope and slit lamp give conclusive evidence that many cases of lenticular opacity never reach the stage when surgical intervention becomes necessary, and that in the routine use of this instrument one is amazed to find the great number of lenses which show well defined opacities in one form or other which either never developed into true cataract or completely disappear under appropriate treatment. Cataract must therefore be regarded as a diseased condition of the lens secondary to some local manifestation within the eye, or to some constitutional disturbance.

Duke Elders<sup>5</sup> in his experiments demonstrated the aborted effect of the shorter light waves on the tissues of the crystalline lens. He found that workers using mercury lamps (short wave light), glass blowers and iron workers are among those most likely to be affected.

That the absence of necessary elements in the fluids of the body for the proper nourishment of the affected atrophic tissues is evidently responsible for the change in the crystalline lens was demonstrated by Weeks who refers to the cataract accompanying myotonic dystrophy.

Eye strain should be avoided by frequent examination and by complete and full correction of refractive errors. Shastid<sup>6</sup> goes so far as to advise overcorrecting of presbyopia by a one fourth to one half diopter and states that the ciliary muscle which is stronger than it is in youth, cramps down on the lens in an attempt to force upon it an increased convexity. The contact of the ciliary processes of the lens capsule produces trauma.

No specific remedy for the treatment of incipient cataract has been found although various local remedies and theories have been advocated. There

Read before the St. Louis Ophthalmic Society, January 28, 1938.

has been no approved remedy which will absorb opaque striae in the lens but it has been conceded by many that a lenticular haze may be removed to a remarkable extent by the use of certain agents. A vascular reaction in the conjunctiva and surrounding tissues referred to as a lymphagogue action which improves nutrition of the ocular tissues by osmosis and endosmosis is referred to by many writers.

Smith<sup>7</sup> reports phenomenal improvement in some cataract cases with the subconjunctival injection of a 1 to 4000 solution of cyanide of mercury.

Pflugh<sup>8</sup> advocates iodine in one form or other and in various combinations and states that the improvement following the use of potassium iodide is probably the result of its action upon the epithelium of the lens and its surroundings.

Dors<sup>9</sup> of Lyons has been prescribing for twelve years an eyebath of 2 per cent solution sodium iodide and 2 per cent solution of calcium chloride for one half hour each day.

Weeks<sup>10</sup> advises the use of equal parts of a 3 per cent solution boric acid and glycerine to be used once a day.

Davis<sup>11</sup> refers to Roemers theory that cataract is due to toxins in the blood arising from faulty metabolism and advocates the injection of lens antigen extract into the body, which stimulates the cells to the formation of specific antibodies which, in turn, neutralize these toxins of faulty metabolism; this can retard or prevent the formation of cataract. Also, these specific antibodies formed by the injection of lens antigen act selectively on the decomposed opaque lens fibers and cause their liquefaction and absorption.

Bissell<sup>12</sup> for fifteen years has had his cases try to exercise their accommodation by bringing a 4 mm. black dot on a card from 20 inches away up to 10 inches from the eye. This is repeated from eight to twenty times a day with only the distant correction worn. He believes that even a slight change in the convexity of the lens during the exercise increases the power to appropriate nutriment.

Greenwood<sup>13</sup> advises the use of 1 per cent solution ethylmorphine hydrochloride instilled into the eye, sometimes used alternate weeks but more frequently two nights a week. He has observed clearing of lens opacities as seen with the ophthalmoscope together with a corresponding improvement in vision.

My experience with the local use of 1 per cent solution ethylmorphine has been favorable in several cases, one of which I will mention.

#### CASE REPORT

Mr. G. W. M., aged 68 years, consulted me on March 18, 1932, on account of failing vision. His vision was: Right eye with -4.25 sphere vision equaled 20/48 and left eye with -5.75 sphere vision equaled 20/48. His general physical examination was essentially negative except for five infected teeth which were extracted. The ophthalmoscope showed incipient lens changes in right and left eyes. A 1 per cent aqueous solution of ethyl-

morphine hydrochloride was prescribed to be used in each eye twice a week. This treatment has been continued without interruption up to the present time. After frequent examinations during this period of time and with no change in glasses his vision has remained 20/48 in either eye and he has continued his vocation.

436 University Club Building.

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## RARE CASE OF TYPHO-ASCARIDIASIS

OWEN KRUEGER, M.D.

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The case I report herewith is that of a white boy aged 17 years, a jockey, who came under my observation in June, 1937.

His employer, a race horse owner, consulted me at my office regarding one of his jockeys who was severely ill supposedly with typhoid fever. The patient was in a rooming house and he wanted him removed to a hospital.

Upon further inquiry I learned the boy had been ill for several weeks with high temperature, frequent severe abdominal pains, headache and drowsiness. I was further informed that the doctor in attendance had a Widal test made which was reported to be positive and advised that the boy be removed to a hospital for better nursing care. Therefore, with the doctor's consent, I transferred the boy to St. Margaret's Hospital on June 15, 1937.

Upon admission Dr. Rogers, my intern on duty, elicited the following history:

#### REPORT OF CASE

Ten days before the actual commencement of the illness the boy contracted what was thought to be a cold and developed a diarrhea. Five days later he had nose bleed. He gradually began to feel weak and tired and this condition became progressively worse until he was unable to walk. There was no history of chills or severe backache. The neck was not stiff and could easily be moved backward and forward without resistance. Examination of chest proved negative with the exception of a slight cough.

There was no indigestion, nausea or vomiting and the abdomen felt soft though slightly tender and no masses were felt anywhere within the abdominal cavity. The tongue was thickly coated, dry and the lips



appeared parched; a scar in the lower right quadrant was the result of a previous appendectomy; the ears were normal and the eyes looked dull and sunken and were slightly jaundiced. Examination of the nose was negative but some nasal incrustations were present. The mouth temperature was 104.8 F., the pulse 132, irregular, respiration 32.

The result of the laboratory test was as follows: Widal, negative. Paratyphoid A and Paratyphoid B, Malta fever agglutinations negative; spinal fluid clear, cell count 2, Pandy negative, Wassermann negative; sugar positive; urine negative. Hemoglobin 76 per cent; red blood cells 3,970,000, white cells 3,700; polymorphonuclears 90 per cent; large lymphocytes one; small lymphocytes six; mononuclears three; malarial plasmodia absent.

During the first forty-eight hours he was nauseated and frequently vomited a thin watery fluid. On the fourth and fifth days he vomited food and orange juice. He also complained of his neck being stiff. He slept most of the time and had to be aroused to partake of fluids and nourishment, never refusing the latter. He was always hungry. There were frequent involuntary passages of urine. On the eighth day he developed a pustular eruption across his back and over the lumbar region and upon the buttocks. The latter were swollen and the abdomen was now quite distended. On the seventeenth day a large superficial left axillary abscess developed. This was followed by a small one upon the left thigh.

The temperature varied from 99 F. in the morning to from 101 to 104.8 F. in the evening for twenty-three days. The pulse rate during this period varied from 74 to 132.

The treatment was symptomatic; enemas for the bowels, temperature baths and aspirin for the fever as required. Being a resident of Oklahoma quinine was administered at different periods in case some malarial infection might be present.

After three weeks had elapsed and no definite diagnosis had been made, his employer became anxious and worried over his continued illness. In discussing the case, he told me the boy had always had a voracious appetite as long as he had known him and that at meal time the boy would eat twice as much as he himself did.

This statement coincided with the patient's actions for no matter how high his temperature when aroused from a stupor he was always ready to eat.

The following morning I asked the patient if he had ever passed a section of tapeworm, describing it to him, or if he had ever heard his mother say that he suffered with worms as a child. He said he had not but that he had a funny feeling in his bowels at times. On visiting him later the same day he told me since I was there in the morning he remembered his mother saying that when he was 8 years old he had an awful choking spell, and while she was looking in his mouth she thought she saw a worm and tried to get it with her fingers but failed.

Acting upon this statement, his enormous appetite and the generally negative laboratory findings, I gave him two powders of *santonin*, followed later with a dose of castor oil.

The next morning the nurse met me in the hall smiling, holding a small enamel basin half filled with warm normal salt solution containing a live round worm a little more than half the thickness of a lead pencil and eleven inches long.

Following the expulsion of the worm, the boy's temperature became normal and remained so. Five days later he was dismissed from the hospital feeling fine and for the first time in months his appetite became that of a normal boy of his age. Other anthelmintics were administered three times during the following thirty days with negative results.

In analyzing this case which, to say the least, is unusual and rare, it looks very much as if the cause of his trouble was the presence of the worm in the intestines.

In reviewing the literature it becomes quickly apparent that while *Ascaris* is the most common human parasite found, especially in children, and is as a rule a harmless disease, yet a number of cases have been reported which presented rather severe and serious symptoms and showed the many complications which may be caused by this parasite, especially if it finds access into unusual places.

The worm crawling up the esophagus and reaching the larynx has been known to produce fatal asphyxia. Again cases are reported in which it has gained access into the trachea and lungs causing pulmonary gangrene, and its entrance into the gall-bladder and bile ducts has been known to cause abscess of the liver.

In the intestines the round worm frequently forms an irritating substance which may produce various nervous symptoms resembling meningitis. Chufford, Marie and Tauchon (Osler) report a remarkable case of fever with intestinal symptoms, foul breath and intermittent diarrhea all caused by the presence of this worm in the intestines. They gave this symptom complex the name "typholumbricosis" because it resembled typhoid fever. In such cases the febrile condition, as in this case, may continue for some weeks, and it seems quite pardonable that such a symptom complex, especially if accompanied by a marked leukopenia, is mistaken for typhoid fever.

The rapidity with which all the symptoms subsided, after the administration of *santonin* and the passage of a large female worm, leaves no doubt that this is one of those rare cases of typholumbricosis above mentioned.

The Widal test, said to have been reported positive in this case, does not necessarily throw any doubt on the final diagnosis since the technic of this test in inexperienced hands, especially if unguarded by certain precautions, often gives false positive readings.

The fact that there is scarcely a physician, no matter how extensive his practice, who has met with such a case seems ample justification for the publication of this paper.

220 Argyle Building.

#### TYPHOID PYELONEPHRITIS

Hobart A. Reimann, Philadelphia (Journal A. M. A., Aug. 20, 1938), cites a case of typhoid pyelonephritis presenting systemic symptoms and signs of typhoid lasting forty-seven days; the clinical features were remarkable in that no symptoms referable to the intestinal tract were observed. The main interest centered about the typhoid state with threatened uremia and evidence of retention of metabolites, typhoid bacilluria, pyuria, hematuria and pain in the right lumbar region, which were present as early as the eighth day of illness. The patient recovered, but pyuria, bacilluria and hematuria persisted.

## THE TREATMENT OF SYPHILITIC PSYCHOSES WITH TRYPARSAMIDE AND THERAPEUTIC FEVER

P. V. DREYER, M.D.

HUNTSVILLE, MO.

This report includes 104 consecutive cases of advanced paresis admitted to the Fulton State Hospital from September 1, 1933, to November 1, 1935. The cases were selected after September 1, 1933, since tryparsamide therapy was started on that date.

These cases were all diagnosed as general paresis of the insane by the entire staff of the institution. Each case showed a definite psychosis in addition to positive blood and spinal fluid Wassermann tests.

### RATIO OF SEXES

Of 104 consecutive cases, seventy were males and twenty-five were females, or approximately 1 woman to 3.2 men. There were twenty-one Negroes, seventeen men and four women or a ratio of 4.2 to 1. In the group of eighty-three white patients there were twenty-one women and sixty-two men. This gives a higher incidence of females in the white group or approximately 1 woman to 3 men.

This ratio of incidence is in keeping with Furbush's survey for the National Committee for Mental Hygiene which gives a ratio of 9 males to 2 females developing neurosyphilis in a large series of syphilitic patients. According to Pusey, this is due to a sexual behavior and not that there are four times as many males with syphilis. Actually there are approximately 1.5 times as many syphilitic men as women in the general population.

Table 1. *Ratio of Race and Sex*

White males	62	White females	21	Ratio of 3 to 1
Negro males	17	Negro females	4	Ratio of 4.2 to 1
Total	79	Total	25	Ratio of 3.2 to 1

### HISTORY OF CASES

The histories of these patients are not complete as to the appearance of the primary or secondary lesions. On some of the cases no history of the duration of the psychoses was obtained except what data was obtained from the patient.

Of the 104 cases, thirty-seven gave a history of a sore or chancre. This represents only 34 per cent of the patients so it must be a low figure for a primary lesion. The period between the appearance of the primary lesion and the development of paresis varied from two years to thirty-six years. The average for the thirty-seven patients was thirteen and eight tenths years. The length of time elapsing before paresis developed did not seem to influence the severity of the condition or the ultimate prognosis.

The disease seems to invade the nervous system rapidly in some cases and treatment is of no avail while in others it takes many years for the nervous

system to be affected. Some of the latter type of cases have a good prognosis but, in reviewing this entire group, it is found that those cases in which paresis developed in from five to ten years after the primary lesion responded most favorably to treatment.

### HISTORY OF PSYCHOTIC SYMPTOMS

The duration of the psychotic symptoms of these patients varied from a few days to four years. An accurate history was obtained in ninety-six cases and the average duration of symptoms was fifteen and two tenths months.

When these patients are divided into two groups, recovered cases and those dying or deteriorating during treatment, I found the average duration of symptoms for forty-two recovered cases to be ten months, while for the fifty-four fatal and deteriorated cases it averaged nineteen and three tenths months. This shows the necessity for early diagnosis and treatment and this factor also is useful in rendering a prognosis.

The age of the paretic patient on admission is important prognostically. In this group the age varied from 17 to 73 years and averaged 43 years. The average age of those dying during the first two years was 49.9 years or distinctly higher than the average age on admission. The average age of females on admission was 39.6 years while for males it was 44 years. Patients over 60 years of age usually are not treated unless they are in good physical condition.

The average age of all patients who recovered was 38.2 years while for those patients who deteriorated or died during treatment it was 46.4 years. These figures definitely show that the younger patients with paresis have a much better prognosis. There probably are at least two factors working to influence the final result. These are the actual length of time the disease has been present in the brain and the general wear and tear on the individual caused by his age and occupation. I believe the prognosis for paresis in patients over 50 years old depends entirely on their general physical condition and ability to withstand antiluetic treatment.

Table 2. *Average Ages*

Average age of patients on admission (104 cases)	43.0 years
Average age of those dying during first two years (35 cases)	49.9 years
Average age of group improved by treatment (40 cases)	38.2 years
Average age of group deteriorated or died under treatment (60 cases)	46.4 years

### STUDY OF SEROLOGICAL REACTION

The serological reaction of these cases is often an important diagnostic aid since the psychotic symptoms of paresis may simulate any other mental disease. Most of these cases are fairly well advanced and have received no treatment or blood and spinal fluid tests. Blood Wassermann tests are routine on all patients admitted and spinal fluid Wassermanns are routine on all patients under 60



years of age, and on all patients over 60 years of age who have a positive blood Wassermann.

In this group of 104 cases there were twelve patients or 10.5 per cent with negative blood Wassermann tests who had 2 plus to 4 plus positive spinal fluids. In reviewing these cases it was found they usually gave a history of a primary lesion with a short course of treatment and a promise that they were cured. Of these twelve patients, six died or deteriorated while six recovered under our treatment. The result in this small group is better than of the whole group where only 37.5 per cent recovered.

The remainder of the group or 89.5 per cent presented positive blood Wassermann tests of 2 plus to 4 plus, usually the latter. There were four patients who presented a negative spinal fluid Wassermann test with a strongly positive blood test. These four cases all had a history of extensive treatment and all four patients died of syphilis before two years passed. These patients had all the typical symptoms of paresis so there is no doubt about the diagnosis.

In studying the blood and spinal fluid conditions of these patients after treatment was completed, I found only three cases which had completely negative blood and spinal fluid Wassermann tests. In studying these three cases it was found that each of them was given therapeutic malaria early in their treatment and that each of them had at least fifty injections of tryparsamide and fifty injections of a heavy metal. There was complete recovery of the psychosis in each of these cases. There were only two cases which had negative spinal fluids with positive blood tests and both of these also completely recovered mentally.

Of the sixty-two cases adequately treated there were only five which had a negative spinal fluid Wassermann at the end of the treatment. This shows the blood and spinal fluid Wassermann tests are relatively unimportant as an index to the clinical improvement of the parietic patient. Stokes entirely agrees with our results. Blood and spinal fluid tests are taken every six months during treatment and one month after treatment is finished.

A colloidal gold curve on the spinal fluid was taken on ninety of these cases and a parietic curve of the 55554321000 variety was obtained in seventy-three of the cases. The other seventeen cases gave a modified parietic curve or a tabetic curve of the 012333321000 variety. All of these seventeen patients presented a marked psychosis in spite of a tabetic curve and a few spinal cord signs.

#### TREATMENT

The treatment of paresis in this institution is done by all the staff physicians, each treating the patients on his respective ward. In general we give two years continuous treatment with arsenicals and heavy metals. This means a weekly intravenous injection of tryparsamide of 3 grams and a simultaneous intramuscular injection of a heavy metal.

We give either .1 grain of bichloride of mercury or .025 grams of bismuth salicylate in oil.

We use therapeutic malaria on the younger patients who are in good physical condition. They are allowed to have from eight to twelve chills with a temperature of 104° to 105° F. We also give artificial fever by diathermy to the patients who show the best chances of complete recovery and to the few that are unable to continue tryparsamide due to ocular complications. The patients are given from ten to thirty of these bouts of fever according to their physical condition and clinical response to the hyperpyrexia. A temperature of 104° to 106° F. is maintained for from four to six hours and one treatment is given each week. We continue tryparsamide and heavy metal injections on the same day the fever treatment is given.

We try to give each parietic one of the above forms of fever early in the course of treatment but at the present time the facilities are not complete enough to allow this in all cases. It has been our experience that many of the Negroes are immune to malaria so this treatment cannot be used on them.

#### RESULTS OF TREATMENT

In tabulating the results of treatment I have divided the 104 patients into four groups according to the kind of treatment received.

The first group is composed of thirty-five patients who died before two years elapsed. Most of these received only a small amount of treatment before death occurred and only one patient was improved mentally when he died an accidental death.

These thirty-five patients represent 33.6 per cent of the entire group of cases. The deaths were divided among the sexes in about the same ratio as on admission or 80 per cent males and 20 per cent females. The cause of death in 77 per cent of the cases was syphilis entirely. This was by cerebral hemorrhage, acute meningo-encephalitis or cardiovascular disease. The other causes of death are given in the following table:

Table 3. Causes of Death

Causes	Number of Patients
Syphilis	27
Pneumonia	4
Malaria	2
Septicemia	1
Accidental death	1
	—
	35

The second group is composed of thirty-four patients treated by therapeutic fever or malaria plus tryparsamide and heavy metals. There were twenty-three patients or 67.6 per cent who recovered to such an extent they were able to be discharged. There were eleven patients or 32.4 per cent who showed no improvement or continued to deteriorate in spite of adequate chemotherapy and fever.

The third group is composed of twenty-eight patients who received only tryparsamide and heavy metals in their courses of treatment. There were

seventeen patients or 60 per cent who recovered and were discharged. The remainder of the group, eleven patients or 40 per cent, remained stationary or deteriorated.

In the fourth group are forty-two patients who received little or no treatment of any kind due to their poor physical condition. Forty patients or 95.3 per cent of this group died or deteriorated during the two year period while two patients or 4.7 per cent showed a spontaneous recovery in their mental condition. Stokes states this condition is relatively rare and usually is only temporary, lasting from six months to a few years.

In combining the second and third groups that received adequate treatment there were sixty-two patients. Of these, forty patients or 63.9 per cent were improved. Our results of treatment compare favorably with those in the literature which vary from 5 per cent to 85 per cent improved. The wide variation is due to the type of treatment used and the stage of the disease treated. Stokes says "that of all cases of advanced paresis, one third will die during the course of treatment, one third will be improved and one third will remain stationary or deteriorated." This statement applies to the use of tryparsamide as the method of treatment.

Table 4. Results of Treatment

34 cases treated with fever, tryparsamide and heavy metals:	
23 cases recovered	67.6%
11 cases deteriorated or stationary	32.4%
28 cases treated with only tryparsamide and heavy metals:	
17 recovered	60%
11 deteriorated	40%
Total cases adequately treated	62
Recovered	40 or 63.9%
Deteriorated	22 or 36.1%
Total in series	104
Improved	40 or 37.5% of total

#### COMPLICATIONS OF TREATMENT

The complications of treatment with tryparsamide and malaria were as follow: Two deaths from malaria which is 6.4 per cent of all patients given this treatment and three cases of blindness among seventy-six patients treated with tryparsamide.

Our mortality from malaria compares favorably with that of Stokes who quotes several authors' mortality rates as from 2 per cent to 30 per cent with an average of 12.7 per cent. Our incidence of blindness is equal to 4 per cent of the total cases and it also is comparable to other authors' results. Stokes believes the incidence of blindness can be reduced if the patient is prepared with a course of heavy metals and arsphenamines of from six to eight weeks duration before tryparsamide is given.

In regard to optic complications Mayer observed in a series of 155 cases that only 1 per cent showed definite loss of vision while a great many patients actually had better vision after treatment. He does not think syphilitic optic atrophy is a contraindication to tryparsamide therapy.

#### DEFINITION OF RECOVERY

Since there is often much misunderstanding about the mental improvement in paretics and confusion about remissions, I am stating what I mean by a recovery. In this series of cases the recovered patients showed no psychosis as determined by the usual psychiatric examination while on admission practically all the cases were so far advanced that speech defects, grandiose ideas and hallucinations were common findings. We feel that when a patient is in good physical condition and is not psychotic after two years of treatment, he should be paroled to his relatives for six months to be tried in his old environment. If he makes a satisfactory adjustment when paroled he is discharged at the end of six months.

#### SUMMARY

1. Paresis is approximately four times as prevalent in males as in females.
2. Approximately 33 per cent of paretic patients die before they complete two years of treatment and 80 per cent of these die of syphilis.
3. Paresis in patients above 50 years of age usually offers a poor prognosis.
4. In our experience tryparsamide and heavy metals plus some form of artificial fever is the treatment of choice.
5. The results of treatment with only tryparsamide and heavy metals is satisfactory when fever therapy is not available.
6. The blood and spinal fluid Wassermann tests are important diagnostically but are of practically no importance as an index to clinical progress.
7. Optic atrophy is not a contraindication to tryparsamide therapy.
8. Thirty-eight per cent of 104 consecutive cases of paresis recovered from psychosis after two years of treatment with tryparsamide, heavy metals and fever.
9. Of sixty-two patients receiving adequate treatment 64 per cent recovered from syphilitic psychosis.

Telephone Building.

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Pneumonia of the higher types is an important part of the pneumonia problem. In a collected series of 6,545 cases of pneumococcic pneumonia Norman Plummer, New York (*Journal A. M. A.*, Aug. 20, 1938), finds that more than 50 per cent of the cases were of the higher types, 30 per cent being of types IV, V, VII, VIII and XIV. He and his associates used antipneumococcus serum in 111 cases, with a rather marked clinical response and an appreciable effect on the mortality rate for the combined series of cases of pneumonia of types IV, V, VII, VIII and XIV.



## ASEPTIC URETERO-INTESTINAL ANASTOMOSIS

AN EXPERIMENTAL STUDY

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This paper deals with an experimental study in an attempt to find an aseptic method of uretero-intestinal anastomosis. Since Coffey first suggested and carried out submucous transplantations of the ureters into the bowel the problems of uretero-intestinal anastomosis have been largely due to the frequency of complications following operation. So far there seems to be no method advanced that is superior to others and so standardized that it may be done with the minimum of failures. Many surgeons have reported good results with their own technics or with modifications of the methods of other men. In order that failures be lessened, some method should be developed that can be done easily, simply and with the least danger to the patient. Coffey,<sup>1</sup> by his submucous technic, has done much to lessen the danger of ascending infection and hydronephrosis. There still remains the important problem of asepsis and the avoidance of peritonitis. In all three of Coffey's technics<sup>2,3,4</sup> the bowel is opened to admit the cut end of the ureter. This, in itself, is a danger to asepsis. The open bowel is always the possible site of contamination.

Historically, the problem of what to do with patients suffering from exstrophy of the bladder, carcinoma of the bladder, inoperable vesicovaginal fistula, tuberculous bladders, has caused much comment and many attempts at surgery. As early as 1815, Simon<sup>17</sup> suggested that the ureters might be transplanted into the bowel in cases of exstrophy of the bladder. He did this on one case. The patient died. In 1881, Sonnenberg<sup>18</sup> anastomosed the ureters into the urethra. In 1889, Pawlik<sup>17</sup> collected seventeen cases in which the ureters had been transplanted into the vagina. The surgical mortality of this series was 47 per cent. The operation was not favorable because the patient constantly dribbled urine from the vagina. In 1892, Maydl<sup>5</sup> introduced a new technic whereby he transplanted the trigone of the bladder into the large bowel. By means of this technic the sphincter action of the ureters was kept intact. Maydl<sup>5,6</sup> reports two cases treated successfully by this method. Zeas<sup>7</sup> collected data on ninety-seven operations done by the Maydl technic and found that twenty-six patients had died and seventy-one were alive. These cases were operated on for exstrophy of the bladder. Fowler,<sup>19</sup> in 1898, proposed an operation in which an attempt was made to form a valve at the site of the uretero-intestinal anastomosis. He believed that most cases of ascending infections and hydronephrosis were caused by destruction of the valve like action of the ureter when it was implanted directly into the intestine, leaving the ureter wide open to the entry

of countless bacteria of the colon. In order to avoid this he cut the ureter obliquely so that its opening lay against a raised flap of intestinal mucosa, the terminal portion of the ureter passing through the bowel beneath the mucosa for a distance of about 7 cms. before entering the bowel. One year after this, Franklin Martin<sup>8</sup> discussed the possibility of the ureter being transplanted into the bowel and running through a long oblique muscular canal before perforating the bowel at the end of this tunnel through a small hole in the mucosa.

These various operations are now of historical interest only. Today most surgeons transplant the ureter into the colon transperitoneally, using one or a modification of one of Coffey's technics.

The most outstanding contribution to this particular field of surgery was made by R. C. Coffey. In 1910, while working on the implantation of the pancreatic and common bile ducts into the intestine, he began to experiment with the idea of transplanting the ureter into the bowel in the same manner as he had the common bile duct. Previously, he had learned that if he transplanted the bile duct directly into the small bowel it always dilated. He attributed this to a force within the bowel which he called intra-intestinal pressure. He also found that normally the common bile duct passed through the walls of the duodenum down to the mucosa and ran for a short distance beneath the loose mucosa before entering the bowel. However, when the common bile duct was transplanted so as to run beneath the mucosa as it did normally he found that the duct did not dilate. Likewise, after experimenting on the ureter of dogs he found that the same principle held for implantations of the ureter into the bowel; namely, if transplanted directly the ureter invariably dilated and pyelitis, hydronephrosis and destruction of the kidney resulted; but if transplanted so that the ureter ran beneath the mucosa for a short distance before entering the bowel the incidence of hydronephrosis, pyelitis and other complications decreased remarkably.

Since 1910 when these experiments were conducted Coffey has developed three different methods of uretero-intestinal anastomosis. The first consists of transplanting the ureters into the bowel without the use of tubes or catheters. The ureter is cut from the bladder and traverses a muscular canal before entering the bowel through a hole in the mucosa. The second technic consists of tying catheters into the cut end of the ureter and bringing them out through the anus through a small hole in the mucosa. The advantage of this method over the first technic is that both sides can be done at the same time. It has the same disadvantage as the first because the bowel is opened for the catheters to pass through, affording a greater danger of contamination of the field by the contents of the colon.

In attempting to find a method whereby the bowel would not have to be opened, Coffey devised his third technic. In this operation the ureter is cut and the proximal end tied off. Then the ureter

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is laid into the muscular gutter and a stitch is taken through the lumen of the ureter and the bowel and tied. The material used is silk. When the silk suture sloughs through, a fistulous tract is formed between the ureter and the bowel. This method has its disadvantages in that only one side can be done at a time, but there are other disadvantages; namely, as Coffey says, "it is difficult at times to determine whether the silk suture has really entered the lumen of the ureter or the bowel." Also, the fact that the bowel is entered by the suture and then the suture is returned into the field of operation adds a danger of contamination. In order for the necrosing suture method to be successful several things must be carried out at the right time. First, the suture must penetrate into the lumen of the bowel and the intestine; second, the suture must cut through both the ureter and the bowel at the same time. After the abdomen has been closed the operator has no control over the fate of this necrosing stitch. Higgins,<sup>9</sup> in 1933, attempted to modify this technic by passing the suture into the lumen and out again and the mattress suture was completed by passing the threads into the lumen of the bowel and tying the ends. This was done without interrupting the continuity of the ureter. At a later stage, after the anastomosis was functioning through the fistulous tract, the lower end of the ureter could be cut away when the bladder was removed. This method, however, cannot be regarded as aseptic because the sutures having entered the bowel were contaminated by the contents of the bowel and returned to a sterile field to be tied.

Brenizer<sup>10</sup> solved the problem of whether the suture entered the lumen of the bowel by passing a metal ring into the bowel from the anus. In this way the ring can be held by one hand while the suture is passed around it and tied. Some men give patients small rings by mouth a few days before operation and one of these can be picked up by

the examining hand and carried to the necessary point.

The fact remains, however, that there is still an avenue of contamination from the suture reentering a sterile field after passing through a contaminated one.

Results following the various types of uretero-intestinal anastomosis are found to vary with the method and the type of condition for which the operation is done. Much depends upon whether both ureters are transplanted at the same time or whether the patient is a child or an adult. Children seem to stand the operative procedure much better than do adults. Poor workmanship in the performance of the operation as well as a faulty method can account for some of the bad results. Until 1909, the bilateral cases reported in literature gave a surgical mortality of 55 per cent (Steinke). In 1917, Mayo<sup>11</sup> reported bilateral implantations in sixteen cases with a mortality of 23 per cent. In 1929, Turner<sup>12</sup> reported seventeen cases with four deaths or a mortality of about 23 per cent.

Coffey<sup>13</sup> analyzed thirty-five cases of his own in 1931, seventeen operated on for carcinoma of the bladder, three for tuberculous bladders, ten for exstrophy and four for inoperable vesicovaginal fistula and one for extensive carcinoma of the prostate and seminal vesicles. His operative mortality in this series was 20 per cent. Ssolowoff,<sup>14</sup> in 1932, reports thirty cases, the operative mortality of which was 40 per cent. From the Mayo Clinic, Walters<sup>15</sup> reports twenty-five cases with one death in 1934. These cases were all done in two stages. Coffey,<sup>16</sup> in 1933, reports that he successfully transplanted the ureters in six children by means of the necrotizing suture. Higgins,<sup>9</sup> in 1933, reports using his new technic of the necrotizing suture with success on a child 4 years old.

Some idea of the results of several authors may be had from examination of the following table which is taken from Hinman.<sup>14</sup>

Table 1. Uretero-Intestinal Implantations

Condition	Surgeon	Number of Patients	After Implant Lived	Died	After Cystectomy Lived	Died	Total Lived	Died	Peri- tonitis
Urethral occlusion	Ssolowoff	3	1	2					
Uretero- vaginal fistula	Ssolowoff	1	1						
Hunner ulcer	Hinman	1		1					
Vesico- vaginal fistula	Ssolowoff	3	1	2					
	Coffey	4	3	1					
	Hinman	4	2	2					
Tuberculous ulcers of bladder	Ssolowoff	1	1						
	Coffey	4	3	1					
	Hinman	7	7						
Exstrophy of bladder	Ssolowoff	1		1					
	Coffey	10		3	6	1			
	Hinman	11		1	7	3			
Carcinoma of bladder	Ssolowoff	21	4	7	8	2			
	Coffey	17		8	6	3			
	Hinman	17	3	3	5	6			
Summary	Ssolowoff	30	8	12	8	2	16	14	10
	Coffey	35	6	13	12	4	18	17	4
	Hinman	40	12	7	12	9	24	16	2
Total		105	26	32	32	15	58	47	16



We can see from this table that in 105 cases of ureteral transplantation as done by three different genito-urinary surgeons there was a mortality of about 44 per cent after cystectomy. Forty-seven patients died and fifty-eight were alive. Other surgeons give a much better percentage of good results, but in analyzing cases we should always remember that some surgeons do the bilateral operation, some the unilateral, some operate on only selective cases and some operate on any case that can be brought to fairly good preoperative condition.

From a review of the literature, we can easily see that there is some room for improvement. After all, the results are what count in any line of endeavor. If an operation can be done with a fair amount of success by a certain technic, there is no apparent reason for changing the technic, but when we see that the percentage of deaths following such operations with uretero-intestinal implants is still rather high we believe that some attempt should be made to improve and simplify the technic.

In attempting to find a simple and aseptic method of uretero-intestinal anastomosis we have used the dog entirely as the experimental animal. In order to avoid opening the bowel for the reception of the ureter we have tried to anastomose the ureter to the bowel by the necrotizing suture. The methods simulate Coffey's third and Higgins' technics but avoid opening the bowel as is done by Coffey and also avoid local contamination as, we believe, occurs in Higgins' technic.

The various technics used before the final one now in use was adopted will be given with the results and comments on the results in each case.

#### EXPERIMENTS

Experiment No. 1. Loop of Wire Technic. For several preoperative days the dog was prepared by giving it several doses of castor oil. Ether was the anesthetic. The abdomen was opened in midline, the intestines packed off and the lower portion of the sigmoid and right ureter isolated. The right ureter was freed from its bed for a distance of about 6 cms. The colon was incised obliquely for from 4 to 5 cms. at its antimesenteric border, the incision going down to but not through the mucosa. Two traction sutures were held around the ureter and the ureter was brought up to the incision in the bowel so that no tension and no kinks were present.

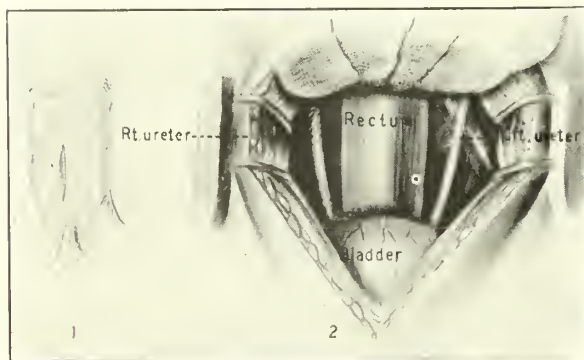


Fig. 1.

A small intestinal needle was then loaded with a long strand of silk thread. This suture was passed into the lumen of the ureter and out again so that a loop of silk thread lay in the lumen of the ureter. The bite in the ureter was about 1 cm. long. In the meantime, the assistant had passed a long hollow rubber catheter up to the site of the bowel incision. Inside of this hollow catheter he passed a long wire, the end of which was looped. One end of the silk thread passing through the ureter was threaded on a round needle and an attempt made to pass this needle into the lumen of the bowel and catch it with the loop of wire. After hooking the needle with the wire the assistant would pull the needle and thread out through the catheter. The same procedure was repeated with the other end of the silk thread. The two ends hung out of the dog's anus. In a few days these threads could be sawed back and forth until they would cut through the ureter and the bowel, thus producing a fistulous tract between the ureter and the bowel.

This technic sounded all right, but in actually doing the operation several difficulties arose. First, much difficulty was encountered in attempting to hook the loop of wire with the needle; several attempts had to be made before this was finally accomplished. The result was that the bowel was entered several times and the needle withdrawn before the next attempt at hooking the needle was made. Naturally, the operative field became contaminated. Four dogs were operated upon with this method. Bilateral anastomoses were done on all four dogs. All four dogs died of peritonitis three to four days after the operation. One of the dogs showed a successful transplant on one side. In the others the anastomoses leaked. The following is a protocol of each dog operated on by the above technic.

Dog No. 1. Male Dog. Operated on by loop of wire technic. Bilateral anastomoses done. Much difficulty encountered in attempting to catch the loop of wire with the needle. Dog died two days following operation. Postmortem showed general peritonitis.

Dog No. 2. Male Dog. Operated on by loop of wire technic. Attempts to hook loop of wire were more successful. Dog lived for three days. On the fourth post-operative day he eviscerated. Postmortem showed one side transplanted successfully but the other side leaked.

Dog No. 3. Female Dog. Same method as on dogs Nos. 1 and 2. Loop of wire hooked fairly easily. Unilateral anastomosis done. Dog was destroyed on the table when it was found that the lower portion of the colon had been perforated by the loop of wire.

Dog No. 4. Female Dog. Unilateral anastomosis by loop of wire technic. The dog died of peritonitis two days after operation.

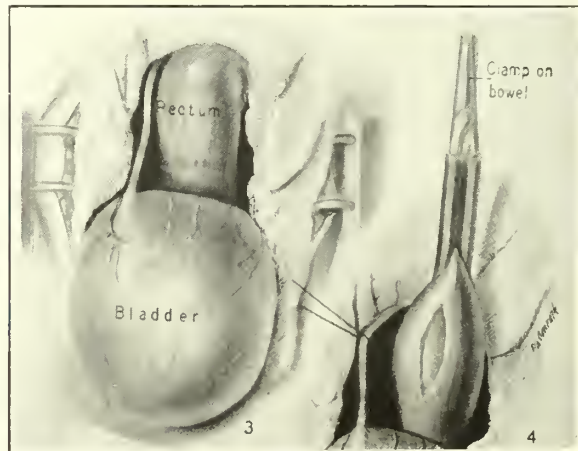


Fig. 2.

This method of transplantation was abandoned and a new technic used.

**Experiment No. 2. Laryngeal Forceps Technic.** In this technic instead of the loop of wire to catch the needle a long laryngeal forceps was used. This forceps could be manipulated outside of the rectum by the assistant. The forceps was passed up to the site of the incision in the bowel. With the jaws of the forceps open, the needle could be passed through the mucosa into the jaws of the forceps. By the use of the forceps fewer attempts were needed before the needle was grasped and drawn out of the rectum. However, the assistant manipulating the forceps from below was working more or less blindly. Also, small amounts of mucous membrane were caught within the jaws of the forceps and carried along causing much bleeding from the rectum. Because of this latter factor and also because several attempts had to be made before the needle was finally caught by the forceps, this method was abandoned after three dogs had been operated on. These three dogs died; one from peritonitis due to leakage of the anastomosis and two from evisceration following abdominal wound infections. The anastomoses in the latter two cases were also infected. The following is a protocol of each dog operated on by the above technic.

**Dog No. 5. Male Dog.** Unilateral anastomosis by use of laryngeal forceps. The needle was easily caught in the jaws of the forceps. Bleeding from rectum followed. Dog died in four days from infection of the abdominal wound and peritonitis.

**Dog No. 6. Female Dog.** Unilateral anastomosis done by means of laryngeal forceps technic. Dog died in two days. Complete evisceration and generalized peritonitis found at autopsy. Death probably was due to contamination of the abdominal wound. Several attempts were made to put the needle into the jaws of the forceps before it was successful.

**Dog No. 7. Female Dog.** Operated on by means of the laryngeal forceps technic. Died in two days following evisceration.

In order to remedy these faults of catching the needle blindly and using more than one stab through the bowel before the needle was caught, another experiment was devised.

**Experiment No. 3. Proctoscopic Technic.** This experiment consisted of using direct vision for the assistant whereby he could see the needle and catch it without making several attempts. This apparently settled the problem of frequent contamination due to passing the needle in and out of the bowel in an attempt to hook the wire loop or to catch the needle with the forceps.

The dog was anesthetized and the proctoscope passed by the assistant up to the site of the prospective anastomosis. Then a long intestinal clamp was put on the sigmoid transversely and the bowel cleaned from below by irrigations. The clamp was allowed to remain in place throughout the rest of the experiment so that the content of the bowel above would not come down and obscure the vision of the assistant using the proctoscope. The abdomen was opened in midline and the ureter and colon (sigmoid) isolated. The suture was

passed into and out of the lumen of the ureter. Then one end of the thread was put on a straight needle and with one stab the needle entered the colon at the lower part of the incision and entered the mouth of the proctoscope from which the assistant could easily catch it with a forceps. The same procedure was repeated with the other end of the thread. The proctoscope was removed leaving the two threads hanging out at the anus. Tension was put on the threads by sewing them to the abdomen of the dog after sterilizing the threads with iodine and alcohol. After from 24 to 48 hours the sutures were sawed back and forth until the whole thread cut through thus establishing a fistulous and aseptic opening between the colon and the ureter. The ureter was tied off and cut below the anastomosis in preparation for removal of the bladder.

By use of the proctoscopic method, five ureters were anastomosed to the colon. A unilateral anastomosis was done on one dog and bilateral anastomoses were done at different time on two dogs. The dog with the unilateral transplantation lived for five weeks and then died. The transplant was normal but the dog eviscerated after five weeks and died of peritonitis. On the second dog of this series, No. 10 of the whole series, the right ureter was anastomosed and then three weeks later her left ureter. She died one and one half months afterward following gangrene of the urinary bladder and severe cystitis. The blood supply to the bladder had probably been injured during the second operation. The right ureter was not functioning and that kidney showed hydro-nephrosis with a hydro-ureter. The left transplant was functioning and the left kidney was in fairly good condition grossly.

On the third dog of this series, No. 11 of the total

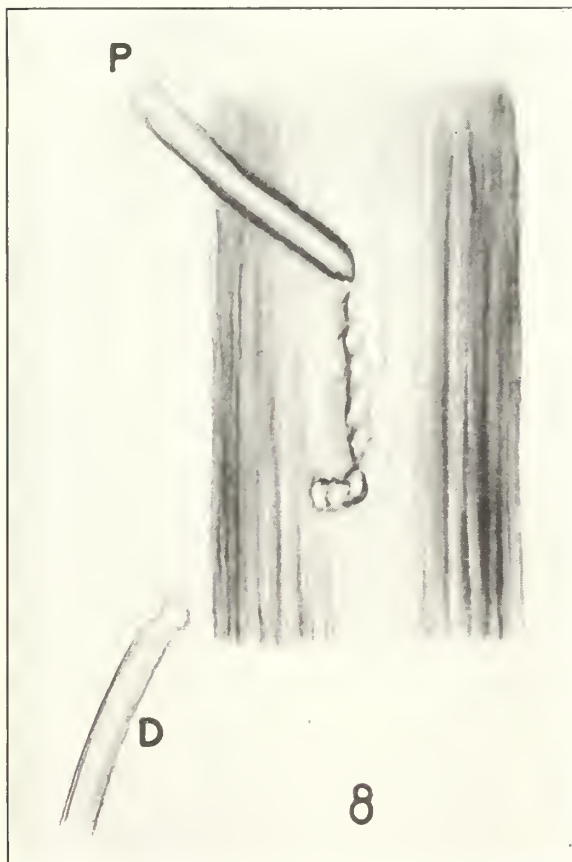


Fig. 4.

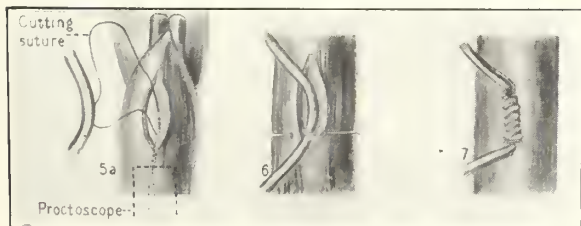


Fig. 3.



series, bilateral anastomoses were done at different times. This dog lived three and one half weeks after the second stage but developed a large swollen joint in the right fore leg. The joint contained much pus. The anastomoses were clean but not functioning. The urine was passing into the urinary bladder on both sides. Examination of the mucosa of the colon showed a healed area where the fistulous tract had been formed but was closed over. The fourth and fifth dogs or Nos. 12 and 13 of the entire series, were operated on with the proctoscopic technic. Both ureters were transplanted at the same time. Both dogs died in two days. No. 12 died of generalized peritonitis. No. 13 died in convulsions. The ureters and pelves of both kidneys were markedly dilated. The following is a protocol of each dog operated on by the above technic.

Dog No. 8. Small Male Dog. Operated on by means of the proctoscopic technic and unilateral anastomosis done. The dog lived for five weeks and then died. Death was due to complete evisceration of the abdominal wound following infection. The anastomosis was clean.

Dog No. 9. Female Dog. Unilateral anastomosis done by means of the proctoscopic technic. This dog lived for five weeks. He was accidentally killed. The anastomosis was clean but had healed over and the urine was running into the bladder.

Dog No. 10. Female Dog. Bilateral anastomoses done at different times. The right side was anastomosed and the ureter tied off beyond the point of anastomosis. Two weeks later the left side was anastomosed. The dog lived for six weeks following the first operation. Autopsy showed severe cystitis. The blood supply had probably been injured during the second operation. The right ureter was not functioning and the right kidney showed hydronephrosis. The left transplant was functioning; the left kidney was in fairly good condition.

Dog No. 11. Female Dog. Bilateral anastomoses by the proctoscopic technic at different intervals (two weeks). Dog died at the end of four weeks. Right fore leg showed a large swollen joint filled with pus. The anastomoses were clean but not functioning.

Dog No. 12. Male Dog. Bilateral anastomoses by means of the proctoscopic technic. These anastomoses were done at the same time. The dog died in two days of generalized peritonitis.

Dog No. 13. Female Dog. Bilateral anastomoses at the same time by means of the proctoscopic technic. The dog died in two days after a series of convulsions. Both ureters and the pelves of both kidneys were markedly dilated.

The proctoscopic method described seemed to offer thus far the best hope for successful results. In doing the operation by this method the assistant had an unobstructed view of the needles at all times. The needles were always under his control. There was little chance for the operator to miss the fairly large opening of the proctoscope when he stabbed the needles through the mucosa into the lumen of the bowel. However, several things were observed at autopsies that needed further study.

In the first place, the fistulous opening between the

bowel and the ureter was found often to be so small that the urine could pass through the opening only with great difficulty. We remedied this by taking a longer bite into the lumen of the ureter and likewise into the bowel. Secondly, we found that often after the anastomosis had been apparently formed, as shown by the fact that after sawing the threads back and forth and the threads came out whole, upon opening the dog at postmortem the fistulous tract between the bowel and the ureter was healed over and the urine was again passing into the urinary bladder. This situation was remedied by the following means. As soon as the threads were sawed back and forth and came out whole, we were sure that an opening had been formed between the bowel and the ureter. Then the abdomen was opened through a small McBurney incision and the end of the ureter beyond the anastomosis was tied double and cut. This forced the anastomosis to function.

The fact that the dogs did better after unilateral anastomosis than after bilateral anastomoses done simultaneously can easily be seen. The edema around the ureter and the site of anastomosis blocked or partially blocked the flow of urine for from 24 to 48 hours. When the operation was done on both sides at the same time the entire outflow of urine ceased and as a result the dogs died. Those cases in which unilateral anastomosis was done could easily get along with one functioning ureter until the edema around the site of the anastomosis had disappeared.

Although the proctoscopic technic was fairly successful we felt that this method could not be used on human patients because of the position the patient had to be in for the convenience of the surgeon and assistant. We found out by trial that it would be difficult for the surgeon to work in the pelvis while the assistant was working from below. In order for both to work at the same time the patient had to be in the lithotomy position. We, therefore, felt that a more convenient position had to be adopted. The proctoscopic technic was discarded and a new technic substituted. The following method is the one which we are now using.

Experiment No. 4. Rubber Hose Technic. The dog was prepared as before but instead of passing the proctoscope an ordinary rubber hose about three fourths of an inch in diameter was passed up to the site of the anastomosis. This rubber hose is made of spongy but rather hard rubber. After the needles have been passed through the lumen of the ureter and out again, each end of the thread is loaded on a straight needle. The bowel is cut obliquely down to the mucosa and the needles are stabbed through the lower end of the incision into the substance of the rubber tube as shown in figure 5. The tube can then be drawn out of the rectum bringing the needles and threads along with it. This method has never failed to work. Only one stab with each needle has been necessary in all cases so far. The needles have never been lost within the rectum nor have they come out of the rubber tube while the tube is being drawn out of the rectum. This method is the most simple of any of the methods which we have tried. It can be done in a short time and requires no special assistant to operate the rubber hose. With this method the human patient can be operated on while the patient lies flat on his back. The hose can be easily passed before the operation begins.

Since we have been using this method we have operated on four dogs, three of which are now living after from one to three months after operation. The following is a protocol of the dogs operated on by this method.

Dog No. 14. Female Dog. Unilateral anastomosis by means of the rubber hose technic. The silk threads were cut through six days after operation and the end of the ureter distal to the anastomosis tied double and cut off. This dog died one week later from an infected abdomi-

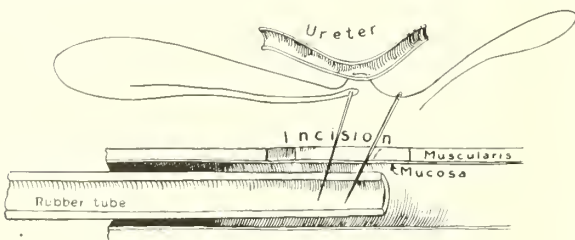


Fig. 5.

nal wound. Death followed complete evisceration. The anastomosis was clean and functioning.

Dog No. 15. Female Dog. Unilateral anastomosis by means of the rubber hose technic. The dog is now living and well after three months.

Dog No. 16. Male Dog. Operated on by the same technic; unilateral anastomosis done. Dog is now living after two months.

Dog No. 17. Male Dog. Operated on by the same technic; unilateral anastomosis done. Dog is now living after one and a half months.

#### SUMMARY

This is the method which we are now using. More work needs to be done on experimental animals before it is tried upon the human patient. While the results obtained thus far have not been startling we believe, now that we have developed the technic to this point more successful results will naturally follow. We hope to show subsequent results in a later report.

We have attempted to develop a simple and easy technic of uretero-intestinal anastomosis. The rubber hose technic is presented as a result of the experimentation.

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My thanks to Dr. W. T. Coughlin, Director of the Department of Surgery, St. Louis University School of Medicine, and to Dr. John McCaughan, Director of the Experimental Surgical Laboratory of St. Louis University School of Medicine, are sincerely given for their advice and many suggestions.

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Wallace E. Herrell and Wyatt C. Simpson, Rochester, Minn. (Journal A. M. A., Aug. 6, 1938), add to the literature what they believe to be the third report of a case of solitary tuberculoma (tuberculous abscess) occurring in the liver. The patient harbored no other demonstrable lesion of tuberculosis as far as could be determined by thorough laboratory studies and subsequent abdominal exploration.

## SODIUM DESOXYCHOLATE CITRATE AND SELENITE MEDIA IN TYPHOID FEVER TESTS

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Prior to April, 1936, the Missouri State Board of Health laboratory was considerably understaffed and the volume of work was too great for the personnel to give adequate attention to the phases of work considered as routine in the majority of state health laboratories. Not only was the laboratory deficient in personnel but expensive and necessary equipment was needed badly. Early in 1936 Social Security funds were allotted to the various states by the United States Public Health Service. The Federal government permitted the use of funds for both additional personnel and for the purchase of equipment.

With the advent of the Social Security funds the entire laboratory was overhauled. New personnel was added, more space was given to the laboratory and much new equipment was purchased and installed. As each new person was added to the staff various phases of the routine work were expanded and more searching attention was given to each specimen received. The chief aim of the laboratory is to employ as many reliable procedures as possible in testing for the various diseases of a public health nature, thus making the service to the medical profession of much greater value than heretofore.

Intestinal disease work probably suffered more than that of any other of the diseases that are public health problems. The reason for this was partially because no one in the laboratory was specially trained in the bacteriology of the intestinal canal and partially because of the system employed by physicians in sending specimens to the laboratory.

The chief tests with reference to the intestinal diseases performed at the State Laboratory are: (1) bacteriological examination of the stool and urine; (2) macroscopic technic of agglutination, and (3) culturing the blood for the specific organisms. These tests will be considered in the order named.

#### STOOL EXAMINATIONS

The specimen container which we send upon request is a 15 mil. wide mouthed bottle. These bottles are cleaned in bichromate-sulfuric acid solution, rinsed thoroughly in tap then in distilled water and dried in the oven. The diluent and preservative placed in the bottles is a 30 per cent solution of glycerine in saline plus enough crystals of lithium chloride to equal 0.5 per cent of the total volume. The purpose of the lithium chloride is to retard the

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growth of colon organisms without retarding the development of pathogens. After the glycerine saline-lithium chloride solution has been placed in the bottles cork stoppers are inserted and the bottles sterilized in the autoclave at 15 pounds pressure for 15 minutes.

When stool specimen are received in the laboratory a generous portion of the specimen is inoculated into selenite-F enrichment broth and the culture is placed in the incubator until the next day. It would be desirable, if the work day equaled 12 hours, to streak from the selenite broth at the end of from 8 to 10 hours, but the work day is seldom so long. This medium lengthens the lag phase of the colon bacilli and enterococci to from 8 to 10 hours whereas the typhoid and paratyphoid bacilli grow rapidly from the time of inoculation, the maximum growth being reached in from 20 to 30 hours. In from 8 to 10 hours after inoculation the colon bacilli and enterococci begin to grow, but the pathogens have a head start. After the selenite-F broth has been inoculated two plates of Endo's medium are streaked. This procedure is followed because of the likelihood of dysentery bacilli being present in the specimen and the sodium selenite in a concentration of 1 per cent inhibits all dysentery bacilli. Streaks could be made on sodium desoxycholate agar without the citrate since dysentery bacilli, even the most delicate ones, grow well on this medium.

The Endo plates are incubated overnight and examined the next day for colonies characteristic of the typhoid-paratyphoid-dysentery group and if found several are transferred to Russell's double sugar agar slants and incubated until the next day. If the reaction on Russell's double sugar agar slants is typical of the typhoid-paratyphoid-dysentery group, namely, acid reaction in the butt; also gas for the *Salmonella* group, but an alkaline reaction on the slant, then an agar slant and lactose broth in a Durham's fermentation tube are inoculated and incubated over night. If gas is not produced in the lactose broth the growth on the slant is used to further identify the culture by means of agglutination in the presence of specific immune sera.

After the selenite-F broth culture has been incubated for from 20 to 24 hours a loopful of the culture is streaked on sodium desoxycholate citrate agar plates and incubated over night. The desoxycholate citrate agar inhibits the growth of colon and gram-positive organisms but enhances the growth of the members of the typhoid-paratyphoid group and some dysentery bacilli. The best incubation period for these plates is 24 hours and when examined at the end of that time, in the absence of members of the typhoid-paratyphoid group, there may be no evidence of growth, for the inhibitory action of both the selenite broth and desoxycholate citrate agar toward colon and gram-positive organisms is quite effective even though the inoculum may have been unusually large. The inoculum on sodium desoxycholate citrate agar plates may be

many times greater than when using other differential media and still well isolated colonies will be obtained. Our experience has been that only a few colon organisms overcome the inhibitory factors of this medium and they are easily differentiated from the intestinal pathogens. Some workers who use this medium for isolation of the members of typhoid-paratyphoid group do not use the selenite-F medium but use only the sodium desoxycholate citrate agar plates making a large initial inoculation on the plates. According to Leifson<sup>1</sup> the hydrogen ion concentration is of extreme importance in this medium and the desirable range for this work is from 7.1 to 7.5. Sodium desoxycholate has a stronger but similar action on bacteria as does bile. Below a  $p_{H}$  of 7.5 the gram-positive bacteria are inhibited, but when the  $p_{H}$  is 7.6 or above the enterococci begin to grow and the inhibitory principle begins to function against the gram-negative organisms. The inhibition caused by the desoxycholate is dependent to a great extent on the basic medium.

The usual procedure in some state health laboratories (specifically Alabama and New York) is to make repeated streakings on consecutive days from each specimen. This was our procedure also until we inaugurated the use of the desoxycholate and selenite media. Our results with these media have been so favorable and other workers have lauded the media so highly that we feel reasonably certain that one complete test with these media is more conclusive than repeated tests with the other media.

If typical colonies are found on the sodium desoxycholate plates they are picked to Russell's double sugar agar and the procedure from there is the same as if typical colonies were picked from Endo's medium plates. In the event that any culture is isolated that is not agglutinated by specific immune sera and the characteristics are typical of the typhoid-paratyphoid group the culture is inoculated into the various sugars.

In searching for pathogens in the urine the procedure followed in our laboratory is to inoculate varying amounts (from 0.2 mil. to 1 mil.) of the urine into veal infusion broth and at the same time inoculate 5 mil. of the urine into 5 mil. of double strength selenite-F broth and incubate over night. The following day a loopful from each tube showing growth is streaked on the desoxycholate citrate agar plates and incubated for 24 hours. If at the end of that time the plates show typical typhoid or paratyphoid colonies the same procedure is used as in the stool examinations; namely, onto Russell's double sugar agar slants, from there into lactose and onto veal infusion agar slants and then tested with specific antisera. If the plates do not show growth the specimen is considered finished and the report of "not found" is made.

The use of the selenite-F enrichment broth and the sodium desoxycholate citrate agar plates has not shortened the time involved in our examina-

1. Leifson, Einar: *J. Path. & Bact.* 40:581-599, 1935.

tion of a stool specimen, but the chances of isolating typhoid and related species are much greater than with other differential and inhibitory media. When the pathogens are found on a desoxycholate citrate plate they are quite often in nearly pure culture and there is little opportunity to fail in recovering them.

#### MACROSCOPIC AGGLUTINATION TESTS

All blood specimens sent into the laboratory for febrile diseases are tested for typhoid fever routinely. The physician may specify definitely that he wishes the blood to be tested for tularemia only or undulant fever only, but we test for typhoid at the same time. Considering only the intestinal diseases we are prepared to test for *B. paratyphosus* A and B, *B. dysenteriae* Shiga, *B. paradyenteriae* strains Hiss Y and Flexner V in addition to *B. typhosus* should the doctor wish; however, we do not test routinely for any intestinal diseases other than typhoid.

All antigens used in the laboratory for agglutination tests are prepared by the author. The Rawlings strain is used in preparing the *B. typhosus* antigen and was brought here by the author from the National Institute of Health. The same technic is used in preparing *B. paratyphosus* A and B and *B. typhosus* antigens. The strains of *B. paratyphosus* A and B were brought here from the National Institute of Health. All of the strains of dysentery bacilli were obtained from the Michigan Board of Health Laboratory.

Transfers from the stock culture are made onto several fresh veal infusion agar slants and incubated at 37° C. for 24 hours. Sterile physiological salt solution is used to make an emulsion of the 24 hour growth. The emulsion is transferred with sterile Pasteur pipettes from the agar slants to veal infusion agar in 32 ounce Blake bottles and the bottles are rotated by hand to insure the emulsion covering the entire surface. The Blake bottles are stacked in the incubator and left for 24 hours.

Next day the growth on the agar in the Blake bottles is covered with 0.5 per cent phenol in saline and the bottles are rotated to wash off the growth. The emulsion is pipetted out of the Blake bottles into centrifuge tubes and centrifuged at high speed for 5 minutes. The supernatant fluid is pipetted off and fresh 0.5 per cent phenol in saline is added to the sediment in the centrifuge tubes and a rubber stopper inserted in the mouth of the tube and the tube shaken for 3 minutes. Again the organisms are thrown down by high speed in the centrifuge. The washing is repeated four times. The purpose of this procedure is to wash the flagella off the organisms. The somatic portions of the cells are more important in the diagnosis of typhoid and paratyphoid fevers than the flagellar portions, whereas the flagellar portions are more important than the somatic in sera from immunized persons. After the organisms have been washed four times enough of the 0.5 per cent phenol in saline is added

to the sediment to make a creamy emulsion. This is poured into glass stoppered bottles and stored in the cold room until needed.

The concentrated suspension is diluted to an opacity that conforms with the silica standard of 500 million. We do not use the silica standard actually, but use a method that was devised by Edward Francis of the National Institute of Health. His method consists of diluting the stock antigen with physiological salt solution to a suspension through which one is just able to read 9 point pica type. This particular type is used in the United States Public Health reports which are issued weekly.

The tests are set up in the following manner: A row of five tubes for each serum to be tested is set up in a large rack and 0.5 mil. saline is pipetted into each tube. Into the first tube of each series 0.4 mil. saline is pipetted, then 0.1 mil. of the serum to be tested. The resultant 1 mil. in tube No. 1 is mixed thoroughly and 0.5 mil. of it is carried over to tube 2. The contents of tube No. 2 are mixed and 0.5 mil. of the mixture is carried over to tube No. 3 and so on until all tubes have been treated in this manner. After the dilution has been made in tube No. 5 the excess 0.5 mil. is discarded. Then 0.5 mil. of the antigen is pipetted into each tube and the rack of tubes is shaken and set in a water bath at 45° C. for 2½ hours. After the incubation period in the water bath the racks are removed to the cold room until the next morning when the tests are read, recorded and reported.

The majority of the best text and reference books in bacteriology say that a complete agglutination in a dilution of 1 to 80 is considered diagnostic for typhoid fever. We are inclined to feel that, with so large a percentage of the people being immunized, 1 to 80 is too low a dilution to be considered diagnostic. We will return to this question later in the paper.

#### BLOOD CULTURES

The tubes for all blood tests that we send to the doctors and health officers upon request are cleaned in bichromate-sulfuric acid solution, rinsed thoroughly in tap then in distilled water and dried in the oven. After corks have been inserted the tubes are sterilized at 160° C for 1 hour in the oven. We have a large outfit that contains the broth for blood culturing of typhoid, but the outfit is bulky, has to be transported by express and is no more efficient than when the doctor sends us a specimen of blood in a small tube and allows us to culture it.

When specimens are received in the laboratory they are numbered and the cells are thrown down in the centrifuge. The serum is removed aseptically with sterile Pasteur pipettes into marked tubes and set aside to be used in the agglutination tests later. The clots are crushed thoroughly with sterile glass tamperers and poured into sodium desoxycholate broth in small flasks and incubated over night.

The sodium desoxycholate broth is used in cul-



Table 1. Comparison of Cultures of *B. Typhosus* Recovered From Blood Clots to the Titer of the Serum

	1 160+ Positive Agglutination Reactions	Cultures Recovered	1 80 Doubtful Agglutination Reactions	Cultures Recovered	1-40 Very Weak Agglutination Reactions	Cultures Recovered
July 15 to 31	22	13	9	5	21	2
August	33	17	17	2	24	3
September	33	14	9	2	27	2
October	19	8	4	2	15	2
Total	107	52	39	11	87	9
Per Cent of Cultures Recovered		48.59		28.2		10.35

The percentage of cultures recovered from the positive, doubtful and very weak agglutination reactions = 30.9.

turing blood clots for *B. typhosus* because its action is much stronger than bile and there are not nearly so many contaminations. If the  $p_{11}$  is kept between 7.0 and 7.5 the gram-positive organisms are inhibited. There would probably not be any contaminations if the percentage of sodium desoxycholate were higher, but delicate strains of *B. typhosus* also might be inhibited. We use the desoxycholate in 0.1 per cent solution.

Streaks on Endo's medium are made from the blood cultures every day for four days, or until growth is obtained from a culture within the 4 day period. If growth does occur it is generally on the first streaking; however, in some few instances it might not appear until the third or fourth streaking. When growth appears on the Endo plates transfers are made into lactose broth in Durham fermentation tubes and onto infusion agar slants and incubated. The next day if gas has not formed in the lactose broth the growth on the agar slant is emulsified and used for agglutination purposes with specific immune sera.

In case a culture does not react with the specific immune sera, a transfer is made from the lactose broth into veal infusion broth, incubated several hours and another transfer made into another veal infusion broth tube. Just before the work day is over a transfer is made from the last broth tube onto an agar slant and incubated over night. The next day the growth on the agar slant is used for a second agglutination test and if it does not react the broth culture is used to inoculate carbohydrate broths in an effort to identify the culture. Our experience has been that the majority of strains of *B. typhosus* isolated from blood cultures are agglutinated with ease in the presence of immune sera. Much greater difficulty is encountered in agglutinating recently isolated strains of *B. typhosus* from fecal specimens. On several occasions we have had a culture from the feces and a culture from the blood of the same patient, the blood culture would agglutinate quickly whereas considerable manipulation was required to agglutinate the culture from the stool.

Previously we have stated that a complete agglutination in dilution of 1 to 80 seemed too low to be considered as diagnostic in view of so many persons now having been immunized. We have

made a comparison table to show the relation between the titer of the serum and the cultures of *B. typhosus* recovered from the clots. In making the table the period of the highest incidence of typhoid fever during the year was selected. (See table 1.)

Summarizing, we have found that the media containing sodium desoxycholate and sodium acid selenite are far superior in the isolation of typhoid and paratyphoid bacilli than any medium we have used before. At all times great care must be taken to maintain the  $p_{11}$  at the proper concentration or the media will not function properly. Our results show considerable increase in the recovery of typhoid organisms from stools with this media. Blood cultures do not yield contaminants nearly so frequently as when bile broth was used.

#### DIPHThERIA MORTALITY

As has been the practice in all previous annual reviews of diphtheria and typhoid, statistics for the fifteenth annual diphtheria mortality report (Journal A. M. A., Aug. 6, 1938), have been obtained from local health officers. As the time of the 1940 census approaches, local estimates of population becomes less trustworthy. They provide, however, the best available data. The rates must be readjusted in light of the facts obtained at the time of the next federal census. The fourteen New England cities report a continued downward trend in the death rate (from 1.06 to 0.79) for the group as a whole and approach very closely the record of the eighteen Middle Atlantic cities, which latter, however, still hold first place, although the group death rate of 0.71 is slightly higher than the low point (0.65) recorded for 1936. The nine cities in the South Atlantic states report fifty-three deaths in 1937 in contrast to sixty-seven in 1936. The rate has fallen from 2.59 to 2.04. The eighteen cities in the East North Central states report an increase in the number of deaths from 168 in 1936 to 186 in 1937. The rate has increased from 1.73 to 1.88. The six cities in the East South Central states report a rate of 3.16, compared with 2.96 in 1936 (forty-two deaths in 1937, thirty-eight in 1936). The nine cities in the West North Central states report a slight decrease in rate (1.37 in 1936, 1.26 in 1937). The diphtheria deaths decreased from thirty-eight in 1936 to thirty-five in 1937. The eight cities in the West South Central group continue in the unenviable position of having the highest group rate. Impressive, however, is the reduction in the death rate (4.39 in 1936, 3.21 in 1937). The number of deaths has decreased from eighty-seven in 1936 to sixty-seven in 1937.

## SELF-MEDICATION

## REPORT OF A CASE

KENNETH E. PLETCHER, M.D.

ELDON, MO.

The report of one case perhaps does not add greatly to the sum total of medical knowledge. However, I propose to report a single case because of the amazing quantity of self-medication and its apparent results.

## REPORT OF CASE

I was called to see an 84 year old white woman residing in the country. She had a widespread dermatitis covering the entire body including the scalp, external auditory canals, buccal mucosa and vaginal walls and attended by an intense pruritus. Its onset was said to be three days previously. The patient was almost stone deaf and the history was obtained chiefly from relatives. While talking to the patient's daughter, I was amazed to see the old lady seize a large bottle of 5 grain aspirin tablets from a shelf, pour ten or twelve of them into the palm of her hand, put them in her mouth and wash them down with a swallow of water. I remarked upon this to her daughter who in no wise seemed perturbed by the procedure. I was informed that she had been doing this for some time. Further questioning revealed that the patient had begun to take aspirin (for no apparent reason) some five years previously and had gradually been increasing the number of tablets taken at one time. She ordered a dozen 100 tablet bottles at a time from a well known mail order house. I inquired as to the number of bottles taken in the last six months and was told that we could check that by counting the empty bottles which the daughter had saved with a view to putting up jelly in them. I counted 115 empty bottles of 100 tablet capacity each, the contents of which the patient had taken over a six months period. This figures 11,500 tablets or 57,500 grains of aspirin in approximately 180 days, about 319 grains of aspirin a day!

The significant features of the general physical examination were as follow:

1. Skin was dry and leathery bearing the above mentioned dermatitis, the individual lesion of which appeared to be a papule closely resembling scabies and surrounded by a small area of erythema. Much secondary infection was present due to the patient's scratching.

2. Senile emphysema.

3. Heart was moderately enlarged to the left but regular and without murmurs. Peripheral and retinal vessels showed third degree arteriosclerosis. Blood pressure was 170/100.

4. Liver edge palpable but smooth and not tender.

5. Slight pitting edema of ankles and feet.

Laboratory findings were necessarily limited. The red blood count was 3,200,000; Hb., 65 per cent, white blood count 10,200. The differential showed a predominance of mononuclear forms, chiefly lymphocytes. Urine was highly colored, strongly acid, SpG. 1025, trace of albumin, sugar negative. Microscopic examination revealed a moderate number of white blood cells, an occasional red blood cell and a few hyaline casts.

An older physician was called in consultation and offered helpful suggestions for the institution of therapy. The texture of the skin improved slightly under glycerine and phenol lotion but the pruritus was not greatly improved. Needless to say the aspirin was removed from the patient's reach, she was put to bed and fluids given in conjunction with saline diuretics and purges.

We hesitated to give morphine because of its tendency to produce pruritus and confined sedative medication to the barbitals.

The patient improved slightly for the first few days then struck a downhill course. Constitutional measures were of no avail. The urine became scanty and highly concentrated, the breath assumed a urinous odor, a semi-coma developed and a terminal pneumonia, hypostatic in origin, completed a rather hopeless picture. The patient expired approximately thirteen days after the onset of the dermatitis.

The patient once made the remark to her daughter that if she ever stopped taking aspirin she would die. It appears that her opinion bore some weight although we were inclined to consider aspirin the root of the evil.

I should be interested to learn of similar cases and whether the enormous amount of aspirin taken was the cause of the dermatitis or merely superimposed itself on an already damaged cardiovascular-renal system.

## HUMAN REQUIREMENT OF VITAMIN D

P. C. Jeans and Genevieve Stearns, Iowa City (Journal A. M. A., Aug. 20, 1938), define the requirements of vitamin D as those amounts which, with ample intakes of calcium and phosphorus and a diet otherwise adequate, insure sufficient retention of calcium and phosphorus to permit normal growth and mineralization of the skeleton and teeth of infants and children, maintenance of bony and dental structures during adult life and a sufficient supply for mother and infant during pregnancy and lactation. Individual variation in ability to utilize the calcium and phosphorus of the diet without added vitamin D exists at all age periods. A high proportion of infants have poor retention and only a very few retain an ample amount without vitamin D. As the age increases persons in increased proportion are able to retain adequate amounts of these minerals without vitamin D, but at all age periods some persons are found who are not efficient. In defining a standard for the vitamin D requirement it seems desirable to state an amount which will be satisfactory for those who are less efficient. Vitamin D does not decrease the minimum requirement of calcium and phosphorus and this vitamin cannot produce a good retention in a person who is ingesting less than the requirement for these minerals. Vitamin D is not as well utilized on a unit for unit basis from the more concentrated preparations as from those preparations in which it is more widely dispersed. The most desirable concentration has not been determined, but apparently the concentration found in cod liver oil is as effective as any lesser concentration studied. The vitamin D requirement of the full term artificially fed baby is probably between 300 and 400 units a day. Vitamin D is necessary for many and useful for most breast-fed babies. It is tentatively considered that prematurely born babies may require twice as much vitamin D as full term babies during the early period of most rapid growth, after which time the requirement should be the same as for babies born at term. For children between infancy and adolescence a daily allowance of at least 750 cc. of milk together with from 300 to 400 units of vitamin D permits consistently ample retention of calcium and phosphorus. For adolescents a need for vitamin D exists, but insufficient data are available to permit an estimate of the quantity required. It seems probable that from 300 to 400 units a day would be satisfactory. For adults the optimal amount of vitamin D, if a need exists, remains to be determined.



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SEPTEMBER, 1938

### EDITORIALS

#### MATERNAL AND INFANT CARE LECTURES

A program designed to improve maternal and infant care in Missouri began on July 5 under the auspices of the Committee on Maternal Welfare of the Missouri State Medical Association and the Division of Child Hygiene of the State Board of Health. Dr. O. F. Bradford and Dr. Paul F. Fletcher, who conducted the postgraduate lectures on obstetrics and pediatrics the last two years, are presenting the lectures in this program. They speak to lay groups four days a week, Monday, Tuesday, Wednesday and Thursday, on the importance of visiting a physician early in pregnancy, continuing under the physicians care until the baby is born and until the baby is at least 1 year old. On the afternoon or evening of Friday of each week a meeting of physicians of the counties is being sponsored by the medical societies. At these meetings Dr. Fletcher and Dr. Bradford will speak on the various phases of preventive obstetrics and pediatrics. While the lecturers are in a community they will be available to physicians for consultation for indigent patients.

Some 35,000 members of the 1700 Home Makers Clubs under the supervision and direction of the Agricultural Extension Service of the University of Missouri College of Agriculture constitute the lay group sponsoring the lay meetings. This organization has a representative, the county extension agent, in each county in Missouri.

Secretaries of county societies have cooperated with the county extension agents in arranging places and times of meetings and obtaining publicity for the meetings that as great a number as possible may be reached. This program is entirely under county medical society guidance and nothing can be done until secretaries make the arrangements. The program was approved by the House of Delegates at the Jefferson City Session and councilors are fully informed and are assisting in the program.

The schedules of counties in which meetings are to be held in September and October and the county

extension agents in those counties are given. Later schedules will be given in subsequent issues of THE JOURNAL that secretaries of the counties may contact the county extension agents and make arrangements for the meetings. Secretaries should send information on arrangements for the meetings as early as possible to Dr. James W. Chapman, Director, Division of Child Hygiene, State Board of Health, Jefferson City, and also to the office of the State Association.

#### SCHEDULES FOR SEPTEMBER AND OCTOBER

PEDIATRICS		
Date	County	County Extension Agent
September		
6	Macon	Garrett M. Barnhart, Macon
7-8	Randolph	Glenn C. Pittenger, Huntsville
9	Medical Group	
12-13	Chariton	John H. Rush, Keytesville
14-15	Linn	J. Robert Hall, Linneus
16	Medical Group	
19-20	Livingston	Eugene Lee, Chillicothe
21-22	Carroll	Albert Dyer, Carrollton
23	Medical Group	
26-27	Caldwell	Leonard Voss, Kingston
28-29	Clinton	Andrew Adam, Plattsburg
30	Medical Group	
October		
3-4	Daviess	R. S. McClelland, Gallatin
5-6	DeKalb	F. P. Ward, Maysville
7	Medical Group	
10-11	Buchanan	Roscoe V. Hill, St. Joseph
12-13	Platte	L. J. Wormington, Platte City
14	Medical Group	
17-18	Clay	R. J. Laughlin, Liberty
19-20	Ray	Ira R. Thornton, Richmond
21	Medical Group	
OBSTETRICS		
Date	County	County Extension Agent
September		
6	Dade and Cedar	E. H. Hess, Greenfield, and W. E. Yates, Stockton
7-8	Lawrence	J. W. Woodward, Mt. Vernon
9	Medical Group	
12	Polk and Dallas	R. C. Rubottom, Bolivar, and T. A. Blacklock, Buffalo
12-13	Greene	C. C. Keller, Springfield
15	Webster	Vance Henry, Marshfield
16	Medical Group	
19	Laclede	Hensley Hall, Lebanon
20	Camden	J. N. Holt, Camdenton
21-22	Pulaski	George Hardy, Waynesville
23	Medical Group	
26	Phelps	Harold Canfield, Rolla
27	Dent	Clarence McGill, Salem
28-29	Crawford	Eugene Moore, Steelville
30	Medical Group	
October		
3-4	Washington	Paul M. Bernard, Potosi
5	Iron	Paul M. Bernard, Potosi
6	Reynolds	Ted L. Joule, Ellington
7	Medical Group	
10	Madison	J. C. Caldwell, Fredericktown
11	Perry	J. A. Fairchild, Perryville
12	Ste. Genevieve	B. K. Miller, Ste. Genevieve
13	St. Francois	Paul H. Teal, Farmington
14	Medical Group	
17	Jefferson	Earl T. Steele, Hillsboro
18-19	St. Louis	Russell Lander, Clayton
20	Franklin	Floyd Ingersoll, Union
21	Medical Group	

On agreement between the secretary of the county medical society and the speakers, the dates may be rearranged as convenient.

This is an opportunity to improve maternal and infant care in Missouri. This particular program is the first attempted by any state in which the attention of the people is called to the fact that no physician can give adequate maternal and infant care unless the people themselves assume their proper responsibility in seeking such care in time to avoid the many complications and accidents incident to child bearing, child birth and child care.

#### CLINICAL CONFERENCE OF THE KANSAS CITY SOUTHWEST CLINICAL SOCIETY

Kansas City invites every doctor to go to Kansas City October 3 and stay through October 6 for the Clinical Conference of the Kansas City Southwest Clinical Society. Every fall for fifteen years the Society has brought to the physicians of the Southwest a conference on clinical subjects. Every year many interesting topics have been discussed by guest speakers from all over the country and by Kansas City physicians. Every program has been arranged to provide a series of interesting sessions on the practice of medicine. Every director of clinics has kept in mind the one principle that these meetings are primarily for the practitioner, primarily for the purpose of giving the attending physician a concise, easily understood review of new matters and old principles.

This year will be like the other years, yet different. The society realizes that the medical world today is different from what it was fifteen years ago. Medical news reaches all physicians now almost as quickly as it reaches the teacher, the research man and the specialist in the large medical centers. The old relationship of specialist and general practitioner has broken down. Surgery is done at home in the many small, excellent hospitals which dot the map of the Southwest. Almost every doctor does his own surgery, obstetrics and orthopedics.

A clinical conference today must be different. It must tell the new physician how he can meet the many subjects that confront him in his all inclusive practice. It must analyze the many new ideas and procedures that have been put forth during the last year and it must, in these days of restricted incomes, give a two dollar value for every dollar spent.

The 1938 Clinical Conference in Kansas City has been modelled along these lines. Every minute will be spent discussing subjects which are of practical diagnostic and therapeutic value, analyzing carefully all the new things in medicine which the physician hears about but has had no opportunity to investigate carefully and analytically. It will give every doctor who attends many worth while points and many worth while ideas to take home with him. The program contains the names of leaders

in every specialty, students and practitioners of wide experience.

Again, Kansas City invites the doctors of the Southwest for the best Clinical Conference, October 3 to 6.

#### THE NEW FEDERAL FOOD AND DRUG ACT

The Federal Food, Drug and Cosmetic Act, passed by the 75th Congress, was approved by the President on June 25. This Act like the Food and Drugs Act of 1906, is necessarily limited to interstate and foreign commerce and jurisdictions, as the District of Columbia, under federal control.

Concerning commerce in drugs the *Journal of the American Medical Association* of July 23 editorializes as follows:

The most noteworthy advance made by the new Federal Food, Drug and Cosmetic Act in the field of drug control has reference to the introduction of new drugs. The act forbids the introduction, or the delivery for introduction, into interstate or foreign commerce of any new drug, unless an application has been submitted to the Secretary of Agriculture and has become effective. The scope of this prohibition is manifest when it is recalled that the term "drug" is defined by the act to mean all articles intended for use in the diagnosis, cure, mitigation, treatment or prevention of disease, except instruments, apparatus and contrivances intended for such purposes, and that the term "new drug" is defined by the act to include any drug, not heretofore subject to the Food and Drugs Act of 1906, as amended, which is not generally recognized among experts, qualified by scientific training and experience to evaluate the safety of drugs, as safe for use under the conditions prescribed, recommended or suggested on the label. The Secretary is authorized, however, to exempt from this prohibition drugs intended solely for investigational use by experts qualified by scientific training and experience to investigate the safety of drugs. Except as authorized by the provisions of the act with reference to new drugs, the new act leaves to private initiative and enterprise the fixing of drug standards, as it was under the Food and Drugs Act of 1906, but it adds the American Institute of Homeopathy to the corporations that may engage in such activities. It authorizes, too, all the corporations empowered to fix drug standards to change them at pleasure, by means of supplements to the recognized books of standards, the U. S. Pharmacopeia, the Homeopathic Pharmacopeia of the United States and the National Formulary. The new act specifically provides, however, that it shall not be construed as in any way affecting, modifying, repealing or superseding the provisions of the virus, serum and toxin act of July 1, 1902, which places the supervision and control of the manufacture and distribution of viruses, serums, toxins and analogous products under the control of the United States Public Health Service.

Any drug—and again it is important to bear in mind the statutory definition of the term "drug," already stated—that is not designated solely by a name recognized in the United States Pharmacopeia, the Homeopathic Pharmacopeia of the United States or the National Formulary, or in a supplement to one or the other of them, must be labeled to show its common or usual name, unless it is dispensed on the prescription of a physician. In the case of a drug made of two or more ingredients the label must show the common or usual name of each active ingredient, including the quantity, kind and proportion of any alcohol. The name and quantity or proportion of each of the following in-



gredients, whether active or not, must be shown if they are present: "bromides, ether, chloroform, acetanilid, acetphenetidin, amidopyrine, antipyrine, atropine, hyoscyne, hyoscyamine, arsenic, digitalis, digitalis glucosides, mercury, ouabain, strophanthin, strychnine, thyroid," or any derivative or preparation of any such substances. The disclosures with respect to these ingredients are not required in the case of drugs dispensed on the bona fide prescriptions of physicians, dentists and veterinarians. Any drug that is not dispensed on a written prescription of a physician, dentist or veterinarian and that contains "alpha eucaine, barbituric acid, beta-eucaine, bromal, cannabis, carbromal, chloral, coca, cocaine, codeine, herion, marihuana, morphine, opium, paraldehyde, peyote or sulphonmethane," or that contains any chemical derivative of any such substance, which derivative the Secretary of Agriculture has found to be habit forming and has so designated, must show on its label the name, quantity and percentage of such substance or derivative and in juxtaposition therewith the statement "Warning—May Be Habit Forming." These provisions as to habit forming drugs apply to drugs dispensed on prescriptions of physicians, dentists and veterinarians, as well as to drugs otherwise dispensed, unless the prescription is marked by the writer as not refillable or its refilling is prohibited by law.

While no agency is designated for setting standards for instruments and apparatus the provisions in regard to labeling will afford far more protection than the former act.

Under the new act foods, for which standards and definitions of identity have not been prescribed by the Secretary of Agriculture, must be labeled to show common or usual names, denoting names of each ingredient if composed of more than one ingredient. Food represented to have special dietary properties require labeling to show value claimed.

The rulings on cosmetics are rather general. No ingredients need be disclosed on the labels and poisonous or deleterious ingredients are forbidden only when it can be shown such properties are injurious under conditions prescribed for users or conditions of customary use. Any toilet article represented as having qualities of preventing or curing disease is classed as a drug.

The act will not become wholly effective until one year after its approval.

#### PSYCHIC AND HORMONAL CONTROL OF MENSTRUATION

The menstrual cycle of the average woman recurs every twenty-eight days. During the last decades an immense amount of research has discovered the complicated hormonal system which presumably regulates this phenomenon. The cycle is said to be under the control of the anterior lobe of the hypophysis. This gland elaborates at least two hormones having to do with the menstrual cycle. The first of them (Prolan A) stimulates the growth of the graafian follicle. In turn, the latter elaborates a hormone. Perhaps the concentration of these two hormones in the blood stream leads to extrusion of the ovum at the midpoint of the menstrual cycle. Perhaps the appearance of the second hormone of the anterior pituitary gland (Prolan B)

plays a role. Under the stimulation of this third hormone the corpus luteum is formed. In turn it elaborates still a fourth hormone but if pregnancy fails to occur the secretion of this hormone is stopped and menstruation results. Then the whole cycle begins over again. There has been some evidence that a uterine hormone, too, participates in this cyclic process. That, in brief, is the present concept of the endocrine regulation of the menstrual cycle.

In animals a similar sequence of events is believed to take place. However, in most of the animals used for laboratory experiment<sup>1</sup> ovulation takes place only after coitus. In them it is evident that something more than hormonal regulation is necessary. It appears probable that coitus induces a nervous response which leads to ovulation. The nervous response probably induces a hormonal response for if the pituitary gland is removed from the animal within an hour after coitus ovulation does not occur.

It is a matter of frequent observation that the human menstrual cycle is not perfectly regular. Indeed, employment of a calendar to record the exact date of the beginning of the cycle has proved surprising to many women who considered themselves perfectly regular. If hormonal influences controlled entirely the phenomenon of the cycle it might be thought that the succession of events leading to their production would not vary. Nevertheless it occasionally happens in clinical practice that the catamenia is as much as ten days late in its appearance. Following this delayed period the menses may again be relatively regular. Investigation discloses the existence of some unusual nervous strain or excitement preceding the delayed period. On the whole, this might be taken as evidence of the importance of the neural regulation of the menstrual cycle. But it must not be overlooked that there is some scant evidence that more than one ovulation may take place between successive cycles in the human female. Likewise there is some evidence that what appears to be a perfectly normal cycle may be entirely without ovulation. Furthermore, dysmenorrhea may be relieved by section of the sacral nerve as well as by the injection of anterior pituitary-like substances.

In general it has been possible to reproduce most of the events of the female cycle in animals through the exhibition of endocrine products. Conclusive proof of the existence of a nervous influence was not easy to obtain although until a few years ago it was thought that the activities of the body were almost entirely mediated through such an agency. For many years it has been known that topical applications to the nasogenital tubercle might allay certain menstrual disturbances. The mechanism of this action has never been clear. Shelesnyak and Rosen<sup>2</sup> have studied the effect following the appli-

1. Allen, Edgar: *Sex and Internal Secretions*, Baltimore, Williams and Wilkins, 1932.

2. Shelesnyak, M. C., and Rosen, S.: *Naso Genital Relationship*, *Endocrinology* 23:58, 1938.

cation of various substances to the nasogenital area of young adult female rats. Oil of mustard, silver nitrate, tannic acid, nupercaine, trichlor-acetic acid, and electrical stimulation, all resulted in fairly characteristic disturbances of the normal sexual cycle. Whether secondary hormonal effects were responsible for the departure from the usual cycle is not disclosed by the present experiments. Nevertheless it must be assumed that the primary agent responsible for the disturbance created was of neurogenic origin.

The observations here discussed may add to the existing confusion regarding the exact nature of the mechanism controlling the menstrual phenomena of the female. They emphasize the multiplicity of control. Perhaps they are only a further manifestation of the extent of the homeostatic mechanism of the animal body. In any event they illustrate to the clinician the importance of employing varied therapeutic approaches for the correction of disturbances of menstruation. Hormonal neural and psychic mechanisms, all and others still unthought of may each play a role in the control of a phenomenon which is now being rapidly placed under exclusive endocrinal therapy.

#### THE PATHOGENESIS OF CORONARY THROMBOSIS

It has been little more than a decade since coronary thrombosis was recognized as a disease entity. Many deaths formerly ascribed, at least by the laity, to "acute indigestion" are now known to have been due to this pathologic complex. Popular attention has been focused upon this disease since a news writer dubbed it "business man's heart disease." It occurs in both sexes, more commonly in persons past the fiftieth year.

The etiology of coronary thrombosis is not clear. Since it is usually found in association with coronary atherosclerosis it has been generally assumed that there was some connection between the two processes, but little was added to the understanding of the pathogenesis of the disease. Nearly sixty years ago it was noted that a fibrin-like substance was deposited on the intima of certain arteries, yet little attention has been paid to it. In 1936 Clark, Graef and Chasis<sup>1</sup> reopened the subject after a study of the microscopic pathology of diseased arteries. They found fibrinoid material attached to the intima overlying atherosclerotic and luetic plaques in the arterial wall.

These workers concluded that this homogeneous material represented "compressed and hyalinized blood elements." Such deposits exhibited varying degrees of organization. In some instances successive fibrinoid deposits encroached progressively upon the lumen of the coronary artery. This led to thrombus formation, the result of distortion in

the passageway of the blood stream. In other instances thrombus formation occurred upon the surface of the plaque. While these observations are helpful they do not go far in solving the problem of coronary thrombosis.

Patterson<sup>2</sup> added immeasurably to the knowledge of this process. He noted varying degrees of hemorrhage within the intima of nine cases of coronary thrombosis. He discovered that the nutrient arteries of the coronary system did not all arise in the vasa vasorum. In the presence of atherosclerosis they arose directly from the intimal surface. This abnormality was not observed in the hearts of children or of adults not exhibiting coronary atherosclerosis. Patterson observed hemorrhages in the walls of such vessels, probably the result of capillary rupture.

Hypertension predisposes to capillary rupture, especially if the capillary walls are not rigidly supported as by extensive calcification. The closer the capillary lies to a pressure source the greater the pressure exerted upon it. In distal capillaries the pressure is less than half that of similar vessels close to the aorta. Hence coronary capillaries are subject to a pressure much greater than that in other parts of the body. Predisposing causes such as emotional disturbances which increase the tension within the vessel are of frequent occurrence. Patterson found that coronary capillaries arising from the intima possessed a narrowed lumen at points where they traversed dense hyaline tissue. Where they traversed softened areas they were dilated. In occasional instances this investigator was able to find evidence of an association between hemorrhage from dilated intimal capillaries and coronary thrombosis.

Wartman<sup>3</sup> has recently added to the knowledge of this interesting pathologic entity. He observed six patients whose clinical symptoms were typically those of acute coronary thrombosis. Autopsy disclosed that thrombus could not be demonstrated in any one of them. Instead, a relatively large subintimal hemorrhage completely occluded the lumen of the vessel. In three of these cases death was attributed to closure of the coronary artery although there was, as yet, no myocardial infarction. A seventh case presented a subintimal hemorrhage in association with a typical thrombus which occluded the lumen. Careful sectioning proved that intimal capillaries had produced vascularization of an atheromatous plaque. Wartman expresses the belief that in this patient rupture of a subintimal hemorrhage led to thrombosis in the arterial lumen.

The studies here discussed afford a basis for a hypothesis as to the origin of coronary thrombosis. The imbibition of cholesterol and related fatty substances disturbs the smooth contour of the arterial lumen. There is deposited thereon fibrinoid mate-

2. Patterson, J. C.: Vascularization and Hemorrhage of the Intima of Arteriosclerotic Coronary Arteries, *Arch. Path.* 22:313, 1936.

3. Wartman, W. B.: Occlusion of the Coronary Arteries by Hemorrhage Into Their Walls, *Am. Heart J.* 15:459, 1938.

1. Clark, E.; Graef, I., and Chasis, H.: Thrombosis of the Aorta and Coronary Arteries, *Arch. Path.* 22:183, 1936.



rial, possibly a condensation product of the blood stream. The reparative process designed to maintain functional integrity leads to scar tissue formation and capillary growth. The new capillaries are subject to the high pressure existent within the coronary system since they arise directly from its lumen. Persons in whom this pathologic process develops are likely to have hypertension; even if no hypertension is present they may suffer periodic attacks of increased blood pressure. Under the strain of present day living there is frequent occasion for emotional disturbance. In persons between the ages of 45 and 65 a high degree of calcification has not ordinarily taken place; hence these new capillaries are likely to be dilated where they pass through nonrigid supporting structures.

The continued assault of pressures greater than the new capillaries were designed to withstand may lead to rupture. The extravasation of blood may be so great as to occlude the lumen partially or completely. In the former instance symptoms associated with impaired myocardial blood supply may become manifest. In the latter instance the classical picture of acute coronary thrombosis may supervene. Under some circumstances it is not improbable that the intimal hemorrhage destroys the continuity of the intimal surface, in which event thrombus formation will follow as it would follow the destruction of arterial integrity elsewhere in the body.

These studies emphasize the importance of the regime prescribed for patients exhibiting the coronary syndrome. Rest and the avoidance of excitement are to be insisted upon. Measures designed to reduce the blood pressure and to prevent its periodic exacerbation are in order. At this time there is no reason to prohibit cholesterol and fatty dietary ingredients in the blind hope of preventing the atherosclerotic process. Caution in the handling of patients presenting this syndrome is commendable. In the more aggravated instances a period of bed rest with appropriate sedation may prevent the occurrence of the classical attack of coronary thrombosis. The extension of studies such as those here discussed may lead to the development of still better preventive measures.

#### SPECIAL SESSION

A special session of the House of Delegates of the American Medical Association has been called to convene in Chicago at 10 a. m. on September 16. The Speaker of the House called the special session at the official request of the Board of Trustees. The business to be transacted will be limited to the consideration of the national health program submitted to the National Health Conference recently held in Washington and to matters which may be submitted to the House by the Board of Trustees. The House will remain in session, recessing from day to day, until its deliberations are concluded.

#### NEWS NOTES

The next written examination and review of case histories by the American Board of Obstetrics and Gynecology of Group B applicants will be held in various cities of the United States and Canada on November 5. The last date for applying is September 5. The next general examination for all candidates (groups A and B) will be held in St. Louis immediately prior to the 1939 Session of the American Medical Association. Application blanks may be obtained from Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6).

Written examinations for certification by the American Board of Internal Medicine will be held in various parts of the United States on October 17, 1938, and on February 20, 1939. Formal application must be received by the secretary, Dr. William S. Middleton, 1301 University Avenue, Madison, Wisconsin, before September 15 for the October examination and before January 1 for the February examination. Application forms may be obtained from the secretary.

The July issue of the *Journal of the South Carolina Medical Association* was dedicated to Dr. Edgar A. Hines, Seneca, South Carolina, in recognition of his many years of service in the South Carolina Medical Association. He was the recipient of a silver tray, pitcher and goblets at the recent annual session of the association. Dr. Hines has been secretary of the association since 1910 and editor of the journal since 1911. He has served as Delegate to the House of Delegates of the American Medical Association since 1910 with the exception of one year and has been a member of the state board of health since 1909.

The tenth annual Inactive Status Training Course for Medical Department Reservists of the Army and Navy will be held at the Mayo Foundation, Rochester, October 3 to 15. Presentations of carefully selected subjects in military medicine are scheduled for the morning, afternoon and evening hours. There will be appropriate sections or special courses for officers of the Dental and Veterinary Corps. Special work in clinics and hospitals will be offered during the morning hours for those asking special assignments. The school program for the last three days of the meeting will be merged with that of the Association of Military Surgeons of the United States. The Surgeons General of the Army, Navy and the Public Health Service will attend and participate. Applications should be made at an early date. Further information may be obtained by addressing Kent Nelson, Colonel, Medical Corps Surgeon, Headquarters Seventh Corps Area, Omaha, Nebraska.

The twenty-third annual meeting of the American Association of Railway Surgeons will be held at the Palmer House, Chicago, September 19 to 23. This association includes members in practically every railroad company in the United States. An interesting and profitable program has been arranged and all physicians and surgeons are invited to attend the sessions as guests of the organization. There will be no registration fee. In addition to scientific exhibits, technical exhibits will include new equipment, advanced types of therapy, new pharmaceutical and biological products and the latest technics in many branches of the profession.

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Abbott Laboratories

Cevitamic Acid—Abbott

Tablets, Cevitamic Acid—Abbott, 25 mg.

Tablets Cevitamic Acid—Abbott, 100 mg.

Drug Products Co., Inc.

Pulvoids Digitalis Folium,  $\frac{1}{2}$  grain

Pulvoids Digitalis Folium,  $\frac{3}{4}$  grain

Pulvoids Digitalis Folium,  $1\frac{1}{2}$  grains

Jensen-Salsbery Laboratories, Inc.

Diphtheria Toxoid, Alum Precipitated (Refined),  
one 10 cc. vial package

Sharp & Dohme

Propadrine Hydrochloride Capsules,  $\frac{3}{4}$  grain

Propadrine Hydrochloride Solution 3%

E. R. Squibb & Sons

Refined Tetanus Toxoid, Alum Precipitated—  
Squibb, 1 cc. vials package

United States Standard Products Co.

Polyanaerobic Antitoxin (Tetanus-Gas-Gan-  
grene) Refined and Concentrated, one vial  
package

The Medical Corps of the United States Navy is offering a number of internships and commissions to graduates of class A medical schools. Examinations will begin on November 7 and applications should be on file at least one month prior to that date. Qualified candidates who have completed internships in civilian hospitals will be commissioned as assistant surgeons with the rank of lieutenants (junior grade) and assigned to the Naval Medical School, Washington, D. C., for a postgraduate course of instruction. Senior medical students who qualify for appointments to internships in naval hospitals will be appointed acting assistant surgeons with the rank of lieutenants (junior grade) for temporary service during the intern year and upon satisfactory competitive examination for permanent appointment. Should an intern desire to return to the practice of medicine in civil life, his appointment as an acting surgeon will be terminated and

he will be honorably discharged from the naval service. Candidates must be citizens of the United States between the ages of 21 and 32 and pass a physical and professional examination. Further particulars may be obtained from the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.

The Abbott Laboratories, North Chicago, Illinois, will celebrate their fiftieth anniversary by dedicating a new research building on October 7. Guests will assemble at the Palmer House, Chicago, in the morning and go by special trains to the laboratory for an inspection of the plant and the new building. Following a luncheon Dr. Ernest H. Volwiler, Vice President and Research Director, Abbott Laboratories, will preside at a meeting at which addresses will be presented by Mr. S. DeWitt Clough, President, Abbott Laboratories; Dr. Karl T. Compton, President, Massachusetts Institute of Technology; Dr. Herbert M. Evans, Professor of Anatomy and Director of Experimental Biology, University of California, and Dr. Thomas Parran, Surgeon General, United States Public Health Service. At a dinner at the Palmer House Dr. Roger Adams, Head of the Department of Chemistry, University of Illinois, will preside and short addresses will be presented by Mr. E. H. Ravenscroft, Chairman of the Board, Abbott Laboratories; Dr. Harrison E. Howe, Editor, *Industrial and Engineering Chemistry*; Dr. George D. Beal, Assistant Director, Mellon Institute, and Dr. Morris Fishbein, Editor, *Journal of the American Medical Association*.

The fourth annual meeting of the Mississippi Valley Medical Society will be held at the Hannibal-LaGrange College, Hannibal, Missouri, September 28, 29 and 30. There will be thirty-five speakers and more than fifty lectures and clinical demonstrations. The first day will be an all-Chicago program with fifteen teachers and clinicians from Chicago participating. Four short courses of instruction of four hours each will be given during the session on "Diagnosis of Cardiac Disease" by Dr. Chester M. Kurtz, Madison, Wisconsin; "Treatment of Common Fractures" by Dr. Arthur Steindler, Iowa City, Iowa; "Diagnosis and Treatment of Common Skin Diseases" by Dr. Cleveland J. White, Chicago, and "Obstetrical Hemorrhages" by Dr. Frederick H. Falls and Dr. William C. Danforth, Chicago. There will be technical and scientific exhibits. A complimentary stag supper will be given on September 28. The meeting is open to all ethical physicians and programs may be obtained from Dr. Harold Swanberg, Secretary, 209 W. C. U. Building, Quincy, Illinois. Missouri members who will appear on the program are Drs. J. C. Jaudon, Q. U. Newell, Frederick V. Emmert and August A. Werner, St. Louis; Dudley S. Conley and Claude R. Bruner, Columbia, and E. Lee Miller, Kansas City. Governor



Lloyd C. Stark, Jefferson City, will speak at an informal banquet on September 29.

The twenty-third International Assembly of the Inter-State Postgraduate Medical Association of North America will be held in the Public Auditorium of Philadelphia, October 31 to November 4. Hotel headquarters will be the Benjamin Franklin Hotel. The members of the medical profession of Philadelphia are correlating for the clinics an abundance of hospital material representing various types of pathological conditions which will be discussed by the contributors to the program. Approximately eighty distinguished teachers and clinicians will appear on the program, a tentative list of which may be found on page 16 of the advertising section of this issue. The subjects and speakers have been selected to cover practically all the subjects of greatest interest to the medical profession in general. A full program of scientific and clinical sessions will take place every day and evening of the assembly starting each morning at 8 a. m. The members of the profession are urged to bring their wives as an excellent program is being arranged for their benefit by the Ladies' Committee. Preassembly and postassembly clinics will be held in the Philadelphia hospitals on October 29 and November 5. Hotel reservations may be made by writing Mr. Thomas E. Willis, Chairman of the Hotel Committee, Chamber of Commerce Building, 12th and Walnut Streets, Philadelphia. The registration fee is \$5. Dr. Peter T. Bohan, Kansas City, will appear on the program with a diagnostic clinic on "Arthritis With Special Reference to Etiology and Treatment."

The organization of the American Medico-Legal Association and the publication of a journal, *The American Journal of Medical Jurisprudence*, have recently been announced. The first issue of the monthly journal will be published on September 15. The association states its activities and benefits as follow: (1) *The American Journal of Medical Jurisprudence* published monthly under the guidance of an experienced editorial board. (2) The association assumes leadership in educational movements which convey authentic information on the legal responsibilities and rights of medical, legal and dental members of the profession. (3) The association actively inaugurates direct research and studies in the field of legal medicine and devises uniformity in policies and standards. (4) It creates standards and principles in forensic medicine. (5) It creates and institutes uniform legislation and organizations that govern precedents in medico-legal matters. (6) Central headquarters are established which acquire and impart dependable information upon all subjects that pertain to legal medicine. (7) The association assists members of the profession in meeting their medico-legal problems. (8)

An annual session will be held for the presentation of papers and discussion of related problems. Annual dues are \$10 and a registration fee to be paid once is \$5. Dr. Frederick C. Warnshuis, formerly secretary-treasurer of the California Medical Association, is president of the association and editor of the journal. Headquarters of the association are located at 137 Newbury Street, Boston, Massachusetts.

## MISCELLANY

### COMMITTEE ON MEDICAL ECONOMICS APPROVAL OF ASSOCIATION NECESSARY TO ESTABLISH MEDICAL AND HOSPITAL SERVICE PLANS

The present economic situation has given an opportunity to lay individuals in the promotional field of health to attempt the establishment of various schemes for medical care and hospital service. Many of these schemes upon careful analysis are of little value to the public and are generally based upon an unethical plan of operation.

The Committee on Medical Economics feels it necessary to call attention to Chapter XI, Section 11, of the Constitution and By-Laws of the Missouri State Medical Association, which reads as follows:

Sec. 11. The State Association, or a county society in manner approved by the State Association, may undertake and coordinate all sickness, care of indigents and low income groups through agreements with public officials, and with physicians and others and by the use of contributions, cooperative funds and other means, provided only that free choice of physician within such agreements shall be retained and that responsibility of physician to patient and all other agreements and tort relationships with patient shall remain as though the dealings were direct between physician and patient. (Adopted 1936.)

The medical profession of Missouri must be alert in their continuing effort to protect their patients and the health of the public. No county medical society or individual member should enter into any prepayment plan for medical, dental or hospital care unless that plan has had the approval of the Missouri State Medical Association.

Group Hospital Service, Inc., of St. Louis, inaugurated two years ago by the St. Louis and St. Louis County medical societies, and Group Hospital Service, Inc., of Kansas City, inaugurated recently by the Jackson County Medical Society under the supervision of the Committee on Medical Economics, are the only ethical hospital care insurance plans operating in the state. No other plan carries the approval of the state medical and dental associations.

Group Hospital Service, Inc., of St. Louis, sponsored by the Missouri State Medical Association, recently completed negotiations with the Missouri Farm Bureau Federation to serve its 30,000 members throughout the state. This effort to make hospital care available to the farmers deserves your support.

Complete information about this nonprofit plan may be obtained by addressing the Secretary of the Missouri State Medical Association, 623 Missouri Building, St. Louis.

CARL F. VOHS, Chairman  
E. L. JOHNSTON  
MORRIS B. SIMPSON

**STATEMENT BY THURMAN ARNOLD, ASSISTANT ATTORNEY GENERAL, DEPARTMENT OF JUSTICE, RELATIVE TO INVESTIGATION OF AMERICAN MEDICAL ASSOCIATION\***

The following is the announcement made by Thurman Arnold, assistant attorney general, in connection with the investigation of the medical profession.

A preliminary investigation made by the Department of Justice in response to numerous complaints has disclosed the following situation with reference to activities within the medical profession in the District of Columbia:

Group Health Association, Inc., was organized in the District of Columbia a year ago by 2,500 Government employees, principally from the lower salary classes, to provide prepaid medical care at a cost which the members could afford to pay. This group retained its own physicians, who have undertaken to provide the members with virtually complete medical care. The Medical Society of the District of Columbia, the American Medical Association, and some of the officials of both these organizations, are attempting to prevent this association from functioning.

**METHODS USED**

The methods they have used are:

1. Threatened expulsion from the District Medical Society of doctors who accept employment with Group Health Association. Because of the power and standing of the Medical Society, and the stigma sometimes attached to expulsion from it, this causes Group Health Association great difficulty in employing competent physicians.

2. Threatened expulsion from the Medical Society of doctors who take part in medical consultations with doctors on the Group Health Association staff. This in effect amounts to forcing members of the Medical Society to participate in an illegal boycott of Group Health Association doctors.

3. The exclusion from Washington hospitals of the Group Health Association staff doctors; this has been accomplished either in combination with the various hospitals or by means of influence, which may or may not have amounted to coercion, upon them. This exclusion has made it impossible for doctors affiliated with Group Health Association to practice their profession in the hospitals and it has prevented members of the association who enter the hospitals as patients from having the services of the physicians of their own choice.

**SEE LAW VIOLATION**

In the opinion of the Department of Justice, this is a violation of the antitrust laws because it is an attempt on the part of one group of physicians to prevent qualified doctors from carrying on their calling and to prevent members of Group Health Association from selecting physicians of their own choice.

The department interprets the law as prohibiting combinations which prevent others from competing for services as well as goods.

The particular persons responsible for this violation can only be ascertained by a grand jury investigation. Such an investigation will be undertaken by the department in the near future.

The reasons for issuing this statement prior to the calling of a grand jury, follow the general policy heretofore announced. The two objectives of the antitrust laws are, first, to act as a deterrent and to provide a means of maintaining competitive conditions in the future. The second objective is a constructive aim which requires the cooperation of those concerned.

In obtaining this cooperation, the Department must avoid making surprise moves. It must warn those who are engaged in what the Department considers violations of the acts of its attitude toward such activities; and in fairness to them and for their own protection, it must do so as far in advance as possible. Such advance notice may also be useful in calling the attention of Congress to the Department's interpretation of the law so that possible amendments may be considered. Advance notice of a contemplated grand jury proceeding is not always possible.

**OBJECTIVE DEFINED**

Tactical reasons, in some cases, as to where it is feared that witnesses may be approached, may compel action without warning. These reasons, however, do not exist in a proceeding against men of the character of those engaged in the profession of medicine.

In obtaining the cooperation necessary to accomplish the Department's antitrust proceedings, it is necessary to put the prosecution in its proper setting. It is therefore important to repeat that an indictment for violation of the antitrust laws does not necessarily charge a crime involving moral turpitude.

Thus, in the present case, the Department does not take the view that the offenses committed are crimes which reflect upon the character or high standing of the persons who may be involved. The analogy to which this proceeding should be compared is that of a prosecution for reckless driving, committed by a person of distinction and good-will who is in a hurry to meet his legitimate engagements.

The absence of moral turpitude, however, does not lessen the duty of the Department to prosecute where it believes violations of the antitrust laws have occurred. This duty has been laid upon it by Congress. Congress has given it no right to use the distinction between malicious violations of the antitrust law and reckless or careless violations as a basis for its choice between civil and criminal procedure.

Congress has not indicated that the respectable character of the defendants or their achievements in other fields, is a consideration for the Department's action. Such matters are properly within its province in recommending the type of sentence, but not in recommending the type of prosecution.

**NO ALTERNATIVE**

As the Department has already announced, therefore, where evidence of violations of the antitrust laws exists, it has no alternative except to proceed before a grand jury, except in those cases where past acquiescence or other special considerations have made a criminal proceeding inequitable.

These introductory observations are necessary because the policy of issuing statements of this character is still new. They are intended to survey the general problem of antitrust policy of which this suit is a part. Their purpose is to create an atmosphere which leaves the door open to a constructive proposal at any stage of the litigation. In order to accomplish this it is important to understand that many types of antitrust violations are in the nature of misdemeanors, and that the power of the courts to determine the sentence offers ample opportunity to avoid undue and unjustified severity on any individual. With the above restatement of our general antitrust policy in mind, we may proceed to consider the particular problems relating to the practice of medicine which form the background of this proceeding.

**ECONOMIC CONDITIONS OF MEDICAL PRACTICE**

Although this proceeding concerns especially the District of Columbia, it is selected because its importance is nation-wide and its value as a precedent is of far-

\*Reprinted from the *Journal of the American Medical Association*, August 6, 1938.



reaching consequence on one of our most pressing problems.

The illegal activities of organized medicine in this instance are typical of what has occurred in other cities throughout the country whenever cooperative health groups have been formed. In discussing the economic conditions of medicine which makes this suit of great importance, it is therefore appropriate to consider briefly some of the broader aspects of the national health problem.

#### CARE FOR ALL

In spite of great technical proficiency, the medical profession has not been successful in furnishing adequate medical care to all the American people at a cost that they can afford to pay. Careful studies have demonstrated that the individual practitioner, even though he devotes a portion of his time to charitable work, cannot supply all the medical needs of persons of low or moderate incomes.

Primarily this is not, of course, the fault of the doctor. It is a result of the low incomes of a large part of the community on the one hand, and of the increasing cost of adequate medical treatment on the other. The development of scientific apparatus, increasing specialization, and better standards of care, desirable as they are, have all contributed to this situation.

Recent studies by government technicians have brought out the fact that the forty million persons in the United States in families with annual incomes of less than \$800 cannot pay for medical care, and in many cases do not receive it when they are in need of it.

For instance, at least half the present toll of mothers' deaths in childbearing, and of infants, in the first month of life, are preventable with proper prenatal care and medical services in delivery. Half the babies born annually in this country are in families with less than \$1,000 income a year. It is therefore significant that infant mortality is five times higher in families with less than \$500 a year than it is in families with \$3,000 or more a year.

#### LEFT WITHOUT CARE

These facts are cited because experience has demonstrated the definite possibility of reducing infant mortality and of danger to mothers by proper care. The enormous difference in the records of low-income families is prima facie evidence that the medical profession as it is now organized is not providing them with adequate care.

Acute illness of all kinds increases as one goes down the income scale. It is 47 per cent more prevalent in families on relief than in those with \$3,000 or more annual income. Chronic illnesses are 87 per cent more prevalent in relief families; nonrelief families of less than \$1,000 income have twice the illness disability of families with more than \$1,000.

In any one year, 10 per cent of the families bear 41 per cent of the costs of illness. Another 32 per cent of the families bear 41 per cent of the costs, while the remaining 58 per cent of the families bear only 18 per cent of the costs.

#### SPREADING COSTS

The same family may not stay in the same sickness group year after year. The incidence of serious illness is extremely uneven, among persons of the same income. That is the reason advanced for cooperative methods of payment for medical care; by spreading the cost over the whole membership, these methods provide adequate service to all at the cost of a moderate and uniform charge to each.

This type of organization is already familiar in the United States in dealing with hospital charges, and has proved highly successful. Group hospital plans on a cooperative basis are in force in over sixty cities and cover more than 1,500,000 subscribers.

These facts make it amply clear that the medical profession's present efforts to meet the problem of making its knowledge and skill generally available have not proved successful even from its own point of view.

Cooperative health associations are primarily aimed to help families not on relief. There is the most pressing medical problem today because they have no public funds and will not go to charity. Many studies of the problem, such as the report of the committee on costs of medical care, a research committee organized under a foundation grant, bring out the fact that the moderate income groups have peculiar difficulty in providing adequate medical service for themselves.

#### AVAILABLE CLINICS

The medically indigent in many localities have access to free clinics or charitable services by doctors, and their unsatisfied needs may be more amply filled than at present by an expansion of private charity or governmental grants. But those with income enough to pay for some medical service either cannot avail themselves of these free facilities, or because of self respect, they do not desire to do so.

Such persons experience no difficulty when their medical needs are slight; but when serious illness strikes, or several members of the family require attention within a short time, the financial burden is excessive.

As has been stated above, these observations are made to put this proceeding in its proper setting. The Department of Justice is not in a position to decide whether or not cooperative health associations are a proper solution. Its function is rather to prevent artificial impediments by organized groups who desire to escape competition from the various attempts which may be made from time to time to bring down the cost of medical care.

#### OPEN COMPETITION

The Sherman act is not a method of directing or planning the future; instead, it is a means of keeping a competitive situation open so that those who can offer services at less cost are not impeded by agreements, boycotts, blacklists, expulsions from societies, or organized activities of any character. The economic conditions are surveyed not with an idea of planning a solution, but with the idea of keeping the situation free from restraint.

#### CASE UNDER PROBE

The circumstances of the case under investigation: Group Health Association is a consumers cooperative organization whose members pay monthly dues; with the funds collected the association retains a staff of physicians and operates a clinic. The association has encountered opposition from the Medical Society of the District of Columbia and from the American Medical Association since its formation. The medical society's methods have already been outlined in the introductory portion of this statement. Typical examples of what has occurred may be given here.

Even before Group Health Association had begun operation of its clinic, the local medical society and the American Medical Association made public attacks upon the ethics of the association and upon its legality and its financial soundness.

At the same time the medical society began expulsion proceedings against the association's doctors; these proceedings were based upon charges of "unethical" conduct, although the doctor's only offense had been their willingness to serve the association. Expulsion of the association's doctors was sought not only from the Medical Society of the District of Columbia, but also from other medical societies affiliated with the American Medical Association in other parts of the nation.

The proceedings against one of the association's doctors were carried to a conclusion and the doctor was expelled. Proceedings against another doctor are still

pending. An effort also was made to secure the expulsion of a Washington specialist who had disregarded the society's edict by engaging in professional relations with a Group Health Association doctor.

#### STRIKING EXAMPLE

A striking example of the restrictions placed upon Group Health Association's doctors in securing consultations with other Washington physicians occurred in the case of a patient suffering from a serious heart ailment. The consulting specialist was instructed by an officer of the Medical Society that he could not consult with the attending association physician. It was, therefore, necessary for the patient to see the specialist alone and for the specialist to communicate his conclusions to the Group Health Association doctor by correspondence. In other instances, Group Health Association checks have been rejected by Washington consultants because of fear of the Medical Society's attitude.

The close relationship existing between the medical society and the principal hospitals in Washington has resulted in denial to Group Health Association's physicians of access to hospital facilities in the District of Columbia. Not even in emergency cases are these doctors allowed to attend their patients. For example, an association member earning \$1440 a year recently telephoned the association's surgeon at midnight and reported that her husband had been taken to a Washington hospital with acute appendicitis, and requested that the surgeon come to the hospital immediately to take charge of the case.

#### CHOICE DEFINED

The hospital declined to permit the association surgeon to operate, notwithstanding the fact that the member had desired this surgeon's services and had paid for them through her membership in the association.

The member, therefore, was compelled to incur heavy surgical and hospital expenses that she would not have needed to contract for if the association had been permitted to carry out, without interference, its agreement with her. She also was denied the right to have the doctor of her own choice attend to the case.

#### TWO—THE CHOICE OF REMEDIES

The evidence revealed by the present investigation appears to warrant submission to a grand jury for such action as that body may determine to be necessary. Such a course is in line with the ordinary practice of the department when it has information indicating that there have been violations of the criminal provisions of the law. As previously announced, the department feels that it cannot take the responsibility of declining to present to a grand jury evidence that the antitrust laws have been violated whenever it has such evidence in its possession.

In the event that voluntary cooperation results in constructive proposals going beyond the elimination of illegal practices, the department will adhere to its previously announced policy of submitting such proposals to the court as a basis for a consent decree. The department's policy with respect to the concurrent use of civil and criminal proceedings has already been explained in detail in the statement relating to the prosecution of the auto finance companies, issued on May 18, 1938.

#### THREE—ECONOMIC RESULTS TO BE EXPECTED

In instituting this proceeding, the Department of Justice again emphasizes that it is not deciding what are the proper methods of solving the problems of medical economics or indeed whether cooperative health associations have a place among those methods. It simply takes the position that monopoly practices should not be employed to prevent what may be illuminating experiments in this field.

The Group Health Association seems to provide the

opportunity for such an experiment, since it is composed of Government employees of general similarity of health, income and working conditions, and occupies a field in the Nation's Capital where close observation may be made of the results, and adequate publicity given to any conclusions.

The department believes that the antitrust laws make it illegal for medical societies or individual practitioners in the District of Columbia to obtain or retain for themselves a monopoly of the community's medical services, so long as adequate standards are maintained in the treatment of patients among those doctors who are willing to serve cooperative or other groups.

#### NO LIMITATIONS

No combination or conspiracy can be allowed to limit a doctor's freedom to arrange his practice as he chooses, so long as by therapeutic standards his methods are approved and do not violate the law. Organized medicine should not be allowed to extend its necessary and proper control over standards having to do with the science and art of medicine, to include control over methods of payment for services involving the economic freedom and the welfare of consumers and the legal rights of individual doctors.

There should be free and fair competition between new forms of organization for medical service and older types of practice, without the use of organized coercion or illegal restraint on either side. If the newer forms of organization should result in inferior standards of therapy, as is feared by their medical opponents, that fact can be revealed only by experiment.

It is hoped that this proceeding will lead to the cessation of such practices as have been alluded to above, with the result that there may be free and fair competition between the new forms of organization and the older types of practice.

When further legislation is desirable, and if so, its form may perhaps be indicated as a result of this investigation.

THURMAN ARNOLD,  
Assistant Attorney General.

Approved:

HOMER CUMMINGS,  
Attorney General.

July 30, 1938.

#### THE NATIONAL HEALTH CONFERENCE

The following editorial which appeared in the *Journal of the American Medical Association* of July 30 gives a résumé of the National Health Conference and is reprinted that members who do not receive the *Journal of the American Medical Association* may have this information on the conference.

In August, 1935, following the passage of the Social Security Act, the President appointed the Interdepartmental Committee to Coordinate Health and Welfare Activities "in order that the full benefits of the varied federal program under the act's provisions might reach with minimum delay and maximum effectiveness the individual men, women and children for whose aid and service the program was brought into existence." Late in May of this year it was announced that a conference would be called in Washington by Miss Josephine Roche, chairman of the Interdepartmental Committee, to consider a national health program developed by the Technical Committee on Medical Care. With the approval of the Board of Trustees, Dr. Olin West, Secretary of the American Medical Association, invited Miss Roche to appear before the House of Delegates of the American Medical Association at the San Francisco session to present a statement regarding the proposed national health conference. Miss Roche found it impossible to attend but sent a message, which was read to the House



of Delegates by Dr. Warren F. Draper of the United States Public Health Service. The statement by Miss Josephine Roche (*THE JOURNAL*, July issue, page 258) should now be read again to obtain the background of the present situation. This statement makes it clear that the Technical Committee on Medical Care has based a comprehensive health program largely on the National Health Survey made by the United States Public Health Service, a study made about a year ago covering 800,000 families, including 2,800,000 people. This study was epitomized in a report<sup>1</sup> entitled "The Need for a National Health Program," which was transmitted to the President in February, 1938.

In her message to the House of Delegates, Miss Roche pointed out that the calling of the national health conference was at the suggestion of President Roosevelt, who urged the Interdepartmental Committee to invite representatives of the interested public and of the medical and other professions to examine the health problems in all their major aspects and to discuss ways and means of dealing with these problems. Miss Roche also pointed out that the size of the conference would be limited to permit frank discussion but that it was hoped that it would be truly representative of both the professional groups who have the technical knowledge and of the general public which is vitally interested in the distribution and application of this knowledge. The conference was expected to contribute to two ends: first, a better understanding of the national needs in the field of health and medical care; second, the formulation of policies which would enable the medical and other professions, private organizations, federal, state and local agencies and individual citizens to cooperate in efforts to meet these needs. It was said, however, that the national health conference would not take formal action on any part of the report and that it was hoped that none of the groups or individuals participating in the conference would attempt to make premature judgments or urge others to do so.

In an early issue of *The Journal* a complete abstract of the national health conference will be presented, indicating the nature of the attendance and the character of the addresses that were made. Until the verbatim report becomes available, it is impossible to present a satisfactory abstract. Nevertheless, it is important that the medical profession begin thinking immediately in terms of the proposed national health program and formulate its own point of view. For this reason, the complete text of the national health program is presented in this July 30 issue of *The Journal*.

The newspapers have reflected to some extent the attitude of those who were in attendance at this conference. A better understanding of this attitude becomes available only when there is a thorough comprehension of the affiliations of those who participated in the conference. The group included physicians and representatives of correlated professions, representatives of labor organizations, of mutual aid and welfare organizations and of farm bureaus and federations, editors chiefly of liberal or radical periodicals, leading workers in the field of the hospital and of hospital insurance organizations and government employees. The physicians who were in attendance fall into several groups, including approximately ten who are members of various bodies of the American Medical Association, four from the "Committee of 430," two from the National Medical Association and several industrial physicians of leading corporations; there were also one representative of the American Osteopathic Association and one representative of the optometric association. Immediately obvious was the absence in the group of any real representation from what might be called industrial or financial leadership or what is usually characterized as "capital."

The program opened with introductory addresses by Miss Roche, Miss Lenroot and Surgeon General Parran. The afternoon session was devoted to prepared addresses by representatives of medical and welfare groups, the concluding address being that of Dr. Hugh Cabot. His statements and his method of presentation were bitter and derogatory to the efforts of the medical profession, leading the audience into an emotional upheaval against the American Medical Association. It should be remembered that feelings run high in Washington at this time because of the daily dramatization of the conflict between the Group Health Assn., Inc., and the District of Columbia Medical Society. Several of those in attendance at the conference responded to the address. This conflict, rather than the prime purpose of the conference, was featured in reports of the conference in the press on the following day.

The entire second day of the conference was devoted to a presentation of the proposed program with subsequent discussion. This discussion was somewhat directed through selection of representatives who had prepared discussions before coming to the conference. The time for general discussion was naturally, therefore, somewhat limited. The final sessions of the third day were again devoted largely to prepared discussions, some of them previously arranged and some presented on the request of those who made them; the general discussion during the entire conference was limited to a few hours.

The summary of the National Health Program indicates that the technical committee has made five recommendations based on its consideration of the health needs of the nation. The first recommendation calls for an expansion of public health and maternal and child health services. This will necessitate an additional annual expenditure by federal, state and local governments of \$200,000,000, the chief purpose being the strengthening of public health organization; the reduction of tuberculosis, venereal diseases and malaria; control of mortality from pneumonia and from cancer; mental hygiene, and industrial hygiene. It is recommended that one half of these increased funds be provided by the federal government. For the expansion of maternal and child health service, which is to include the provision of medical and nursing care of mothers and newborn infants, medical care of children, services for crippled children, consultation services of specialists and postgraduate training, the committee recommends an expanding program with an additional annual expenditure of \$165,000,000, of which the federal government is expected to provide one half. These services are to be provided to people of all income groups in all parts of the United States.

The second, third and fourth recommendations include expansion of medical services and facilities with special emphasis on new diagnostic and therapeutic services. The technical committee finds that hospitals are playing an increasing part in health and sickness services, that hospital accommodations are poorly adapted to the varying needs of people, that general hospital beds are empty much of the time, and that there are too few low-cost or free beds to satisfy the needs. The committee insists that there are 1300 counties without registered general hospitals. It therefore recommended a ten year program providing for the expansion of the nation's hospital facilities by 360,000 beds and the construction of 500 health and diagnostic centers in areas inaccessible to hospitals. It asks also increased financial assistance for these new hospitals or units during their first three years of operation. The annual cost of this program is to be \$146,500,000, of which the federal government is expected to pay one half.

To provide medical care for the medically needy, the committee recommends that the federal government make grants in aid to the states with a program which

1. A National Health Program and Some Proposals Toward Its Design, J. A. M. A. 110:656 (Feb. 26) 1938.

is expected to cost \$400,000,000 annually, the federal government paying one half.

The fourth recommendation requests consideration of a program for raising money by general taxation and special tax assessments and by special insurance contributions to provide medical care for every one. In this program it is suggested that the role of the federal government should be principally to give financial and technical aid to the states in providing sound programs through procedures largely of their own choice.

The fifth recommendation concerns loss of wages during sickness. For this a disability compensation program was urged along lines analogous to unemployment compensation.

The program covering recommendations I, II and III calls for a total annual expenditure of \$850,000,000. Recommendations IV and V are not included in this program, since they involve setting up insurance schemes which would reach tremendous figures. The complete report of the National Health Conference gives the details involved in these recommendations. Attention should be called particularly, however, to page 452 with the heading "Development of Health Insurance by the States." Here it is recommended that a health insurance system might be limited to individuals under a specified income level, for example \$3,000 a year, or might cover all persons in specified employment groups, but the committee definitely recommends a comprehensive system of health insurance covering the entire population. For this purpose it is estimated that the cost will involve from 4 to 4.5 per cent of the income of the covered population. It is felt, however, that it is the task of the federal government to assist the states in the development of sound programs, either for the development of public medical services of health insurance or a combination of the two. The committee points out that the cost to the federal government of a program developed under this recommendation cannot be estimated until the essential features are determined. However, the over-all cost of services to be furnished through health insurance or analogous public health services is estimated to be about \$2,600,000,000 a year.

Conspicuous in the reaction of the attendants on the National Health Conference to this program was the attitude of various special groups. The medical profession pleaded careful consideration and action in embarking on a program of such magnitude. Representatives of the American Medical Association were unanimous in pointing out to the conference that those in attendance could not undertake to decide the attitude or policies of the American Medical Association toward the program as a whole and that it would be necessary to refer the entire program to the House of Delegates of the American Medical Association before offering the response of the medical profession to the program. Representatives of one of the leading organizations in the field of labor—the Committee on Industrial Organization—had opportunity to confer during the conference; one of their speakers indicated that this body was in favor of the program as presented but would not tolerate any deductions from the wages of the worker in order to meet the cost of such a program. Representatives of the American Federation of Labor, however, were inclined to accept the entire program and felt that labor as represented by them would be willing to permit almost any reasonable deduction from wages in order to provide funds necessary for this purpose.

As might have been expected, speakers for all sorts of relief, welfare, social service, farming and similar groups were enthusiastic in their endorsement of the proposed program. The common conception seemed to be that it was not the concern of those in attendance at the conference how much money might be required or where the funds might be developed or how funds might be secured. Rather it was their concern to recognize the

needs which were said to exist and to develop a program for meeting these needs. Since, however, no other group had been called on to develop its own program and to present such a program at the conference, the entire time being limited to a consideration of the program developed by the Technical Committee, alternatives or other possibilities were not discussed.

Notwithstanding that the Committee of 430 had repeatedly declared its opposition to compulsory sickness insurance in communications addressed to the American medical profession, not one of the representatives of this group spoke in opposition to this feature of the government program.

The conference did not pass any resolutions; it did not formally accept the program or indicate definite lines of further action. In her concluding statement to the conference, Miss Josephine Roche indicated that the next step would no doubt be a series of smaller conferences for the formulation of legislation by which the recommendations of the Technical Committee embodied in the national health program could be submitted to the Congress of the United States for consideration and action. Presumably in such consideration the Congress of the United States would be much more concerned than was the conference in the technic of raising the money for the fulfilment of the program and also with integration of this program into the national economy. The medical profession may derive some measure of assurance from the fact that Mr. Arthur J. Altmeyer, chairman of the Social Security Board, indicated, following the address by Dr. Olin West, Secretary of the American Medical Association, that opportunity would be given to the American Medical Association "to compare recipes with those of the government before anything is put into the oven."

In one of the concluding addresses, which paved the way for the final statement by Miss Roche, Edwin E. Witte, professor of economics in the University of Wisconsin, who has long been adviser to various groups of the government concerned in the development of this program, called on all those present who were in favor of the program to unite behind it. He said: "We will hear a great deal more than we have about regimenting the medical profession, putting medicine under the control of politicians, the grave dangers of socialized medicine, about this program being un-American and undemocratic." . . . Mr. Witte, like some of the others in attendance at the conference, was inclined to urge greater and greater participation by the federal government and greater federal control in the handling of these matters. He felt that the most important first step was to secure compulsory health insurance legislation in some one state, and he was inclined to urge concentration on the state of Wisconsin for this purpose.

Time did not permit, nor was there adequate opportunity during the conference, to give detailed consideration to the factual data on which the program was developed. With some of these data there may well be serious disagreement. The Bureau of Medical Economics and the Council on Medical Education and Hospitals will no doubt soon make available technical analyses on these points.

If there seemed to be any single proposal on which all those present seemed to be in some agreement, it concerned the demand for a cabinet position on health and medical service under which all the health and medical services of the federal government might be united. As our government is now constituted, appropriations to put into effect various parts of the program will concern separate legislation affecting half a dozen or more federal bureaus. Furthermore, it seemed to be generally agreed that the National Health Conference had served to dramatize certain definite needs which exist at this time and that all must go forward in an endeavor to meet these needs. There was no



definite unanimity on the technic of establishing a compulsory sickness insurance program, but unquestionably the majority of the audience selected for attendance on the conference, including particularly all representatives of labor, relief and welfare organizations, were in favor of this procedure.

The medical profession faces a situation unique in its history. The House of Delegates will no doubt give careful, calm consideration to the problems concerned. When decision has been made by the House of Delegates, the medical profession must be ready for firm and united action in behalf of that decision. Perhaps there are small groups within the medical profession, as represented at the conference, who are willing to accept in toto the National Health Program as submitted by the Technical Committee on Medical Care. These little groups represent an infinitesimal portion of the 110,000 physicians who constitute the membership of the American Medical Association. When the decision of the House of Delegates is made, individual members of the American Medical Association must carry the responsibility for making that decision and planned action effective. In the meantime, representatives of the Association may well abide by the fundamental principles and policies already established by the House of Delegates. These principles and policies do not forbid, nor do they seem to contemplate any opposition to, a well considered expanded program of medical service, particularly preventive medical service, when the need can be established. Neither is there any fundamental principle or policy which in any manner opposes aid to the indigent or even to what are called the medically indigent if their medical indigence can be established, provided such aid comes through agencies which will not tend to lower the quality or standards of medical care.

## OBITUARY

J. CURTIS LYTER, M.D.

On Sunday morning, October 10, 1937, the many friends of our departed colleague, Dr. J. Curtis Lyter, St. Louis, were surprised, shocked and grieved to read in the St. Louis papers a very simple notice stating that he had died suddenly of heart disease early in the evening of October 9, announcing funeral arrangements with the final request that flowers be omitted. To many this might have seemed a queer request but to his close friends it was readily understood as typical of the man who had accomplished so much throughout the fifty-four years and two days of his lifetime. Fond as he apparently was, but only apparent, of public acclaim for his many achievements, it is quite evident that he wanted to cause no inconvenience to his family and friends after death, and were it possible for him to have dictated this obituary I am convinced he would have chosen brevity and no praise. But, knowing Dr. Lyter as I did and always considering him one of my closest friends, I find it difficult to make any reference to the many years of our most pleasant associations without giving superlative praise to his boundless sterling qualities.

Born in Berry, Kentucky, of humble but respected parentage, Dr. Lyter's early life was one of hardships and deprivation. Endowed with a brilliant mind, a will and a spirit to win he attended school, when his work and self-earned finances would permit, graduating from Smith Academy for Boys in Kentucky and finally receiving an A.B. degree from the University of Missouri. He spent two years in the Medical School of Missouri University and finished the last two in St. Louis University School of Medicine, graduating in the class of 1907. During the years of struggle for an academic and professional education it is of record that he did all kinds

of work to earn funds that he might continue on, and finally, the last two years in medical school did janitor work and answered night phone calls in a physician's office for his room rent. After graduation it was necessary that he take an internship that offered some financial remuneration. Accordingly, he served as resident surgeon in the Wabash Employees Hospital of Moberly, Missouri, under the late Dr. C. B. Clapp, a pioneer surgeon and physician of that city. After a year or more of hospital work he entered into the general private practice of medicine in Moberly where he was unusually successful and acquired a host of friends.

Early in 1915, seeing that he had reached the summit of possibilities in Moberly, Dr. Lyter took several months of special work in internal medicine and diagnoses at the Massachusetts General Hospital, located in the Frisco Building in St. Louis early in 1916 and afterward confined his work to the specialty of internal medicine. Early connections on the staffs of the City Hospital, St. Anthony's Hospital, the Faculty of St. Louis University School of Medicine, and later Missouri Baptist and other hospitals, and close application to duty enabled him to expand from a two-room office, when he first located in St. Louis, to a large number of rooms in the Frisco Building, and a staff which was justly commensurate with the title of the Lyter Clinic. Notwithstanding his extensive and lucrative practice, he never denied his services to worthy charity. Under his tutelage many of our best young internists were trained. Some are located in St. Louis, while others have established practices elsewhere.

His diversions were quite numerous, having been interested in trap and quail shooting, attaining a world record at the former and seldom equalled at the latter, but about 1932 he began to play golf and like most everything he undertook, became quite proficient at the game. His real hobby, however, was hard work, as evidenced by his early calls at the various hospitals, frequently at 6:30 a. m. and seldom reaching his office later than 8 o'clock. In latter years his vacations were usually spent in Europe and were combined with work in the clinics of European countries where he especially pursued the study of heart diseases.

Dr. Lyter was keenly interested in organized medicine and was a member of and served on committees or as a delegate for the St. Louis Medical Society, Missouri State, American Medical and Southern Medical associations. He was also a member of the St. Louis Society of Internal Medicine, American College of Physicians, Phi Beta Pi Medical Fraternity and was in "Who's Who in America." By heritage he acquired an early knowledge of the French language and reinforced by constant study throughout his life, it gained for him the honor of associate membership in the Society of French Speaking Physicians. During the World War he served as Captain of the Medical Reserve Corps and was a member of the committee for the study of cardiovascular diseases.

Soon after locating in Moberly, in the year 1909, Dr. Lyter married Miss Lena Ingram of that city, who was his constant companion and helpmate during the early years of struggle in his professional life. Ill health and finally death claimed that charming lady in 1929, leaving him alone with their young adopted daughter, Martha. In 1930 he married Miss Mildred Luedinghaus of St. Louis, who was also a constant companion, a devoted wife and who, with Martha, survives him.

Much could be said in praise of Curtis Lyter as to his loyalty of friendship, his good citizenship, his charity and above all his devotion to and generosity with his family. But the statement made by a noted lawyer in eulogy at the bier, that on the golf course he was always willing to concede a putt to his opponent reveals his true nature.

To Mrs. Lyter, to Martha and to the remainder of the

family, we extend deepest sympathy in their sad bereavement. Personally, I realize that I have lost a true and faithful friend and take solace only in the knowledge that his untimely demise was God's will.—N. S. M. in the *Weekly Bulletin* of the St. Louis Medical Society.

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ORIN T. UPSHAW, M.D.

Dr. Orin Thomas Upshaw, St. Louis, was born in Atlanta, Illinois, July 23, 1874. He died at his home in St. Louis, August 15, 1937.

He received his early education in Kansas. He then moved to St. Louis and entered the American Medical College, where a brother, Dr. I. W. Upshaw, was a member of the faculty. After graduation in 1894 he started to practice in South St. Louis where he continued until the time of his death.

Dr. Upshaw answered the call of his country during the World War. He was first sent to Fort Riley for his training, and then assigned to Camp Pike where he worked in the hospital. He was honorably discharged from the army after one year of service.

Dr. Upshaw belonged to many organizations including the St. Louis Medical Society, Missouri State Medical Association and American Medical Association. He was a member of the staff of St. Anthony's Hospital. He was active in the Masonic Order, the South Side Lions Club, and was a member of the American Legion. He also belonged to the Gravois Business Men's Association of which he was president for one term.

Dr. Upshaw came from a family of physicians, his father and three brothers all being physicians.

Having had a pleasant personality, he was well liked by his fellow physicians and patients.

His untimely death was a great shock to his colleagues and many friends. He left to mourn his loss his wife and daughter, Mrs. Halley Upshaw Kron, of Lima, Ohio.—M. J. P. in the *Weekly Bulletin* of the St. Louis Medical Society.

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MATTHEW L. CUSTER, M.D.

Dr. Matthew Lee Custer, St. Louis, died in St. Mary's Hospital August 27, 1937, after a brief illness.

Dr. Custer was born in Jefferson, Iowa, in 1894. After graduating from St. Louis University School of Medicine in 1919 he interned in the St. Louis City Hospital. After serving an apprenticeship in urology he limited his work to that branch of medicine.

He served on the staffs of St. Mary's Infirmary, St. Anthony's Hospital and Alexian Brothers Hospital at various intervals. At the time of his death he was on the staff of the St. Louis County Hospital.

Dr. Custer was a member of the St. Louis Medical Society, Missouri State Medical Association, the American Medical Association and the American Urological Association.

He is survived by his widow, Mrs. Mildred Custer, a daughter by a former marriage, Miss Betty Lee Custer, and a sister, Mrs. Helen Custer Benson, of Jefferson, Iowa.—C. D. P. in the *Weekly Bulletin* of the St. Louis Medical Society.

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FRANCIS L. REDER, M.D.

Dr. Francis Le Sirrelle Reder, St. Louis, was born at New Athens, Illinois, on January 9, 1864. His father, Dr. Franz Reder, was a graduate of Heidelberg University who migrated to this country about 1848 with Carl Schurz, Preetorius, and others who were dissatisfied with conditions in Germany. Francis attended private schools at Belleville, graduated from Smith Academy in St. Louis and obtained his Doctor of Medicine from the old St. Louis Medical College, now the Washington University Medical School, in 1884. He interned at the

St. Louis City and Female hospitals for two years and later studied surgery at the German Hospital of New York under Dr. G. A. Gerster for two more years. The next three years, 1888-1891, were spent in study in European universities and clinics.

Returning to America, Dr. Reder practiced for a short time in St. Louis and then was appointed surgeon for the Burlington Railroad with headquarters in Hannibal, Missouri. After six years of railroad surgery he returned to St. Louis and entered private practice in 1897, specializing in general surgery.

A man of distinguished appearance with a good command of English and great knowledge he soon became prominent in medicine in St. Louis. He was quite a linguist, speaking English, German and French perfectly and frequently contributing to the surgical literature in these languages. He took an active part in the work of different medical societies, was president of the St. Louis Medical Society in 1932 and held membership in the Missouri State and American Medical associations, St. Louis Surgical Society, Southern Medical and Surgical societies and the American Association of Gynecologists and Obstetricians. He was elected an honor member of the St. Louis Medical Society November 13, 1935.

Dr. Reder was a courteous, genial man, a gentleman in the truest sense of the word. His patients soon became his personal friends and he gave them the best service possible. Fortunately for him, he was able to continue in active practice up to the time of his death which occurred May 18, 1938. His wife and three children, Mrs. Eloise Allen, Mrs. Dorothea Bolin and Francis Reder, survive him.—L. H. H. in the *Weekly Bulletin* of the St. Louis Medical Society.

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## BOOKS FOR LEISURE MOMENTS

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### DOCTRESSES OF THE REMOTE AND LESS REMOTE PAST

Dr. Kate C. H. Mead believes that women have not been accorded their due share of credit for their contributions to medical advancement. To rectify this oversight she spent two years of intensive study in the great libraries of the world. From meager bits of data, from the papyri, from the illuminated manuscripts of an earlier day, from incunabula, from every possible source she has collected an amazing amount of material dealing with women and the development of medical knowledge. She has had to separate out of this welter of written matter those portions which are improperly accredited to men. She believes that if the truth were known many more works now thought to have been compiled by men would be revealed as the composition of women. Furthermore, the women of medical history had little inclination for writing. They were tender, sympathetic, devoted to the relief of suffering. At least those who did not share in the mad chase of money, a charge which Dr. Mead levels at some of them.

Careless copyists made the author's task more difficult. Being men first, although monks, they shared the general feeling that all good things were done by men. Dr. Mead accuses them of changing feminine to masculine names. Be those things as they may, she has succeeded in writing an encyclopedic compendium.

"Women in Medicine" (The Haddam Press, Haddam, Conn.) is a history of the world from the earliest times to the close of the eighteenth century. Wars and plagues, political intrigues and the incestuous habits of priests and nuns, the social and economic history of the times, the modes of dress and eating, the domiciliary arrangements and the disposal of slops, the cultural status of the period and even methods of gardening vie



for place with the quixotic accomplishments of men and women contributing to the sum total of medical knowledge.

So much is included in this 600 page book that the 43 pages of index will prove indispensable to the individual who seeks a reasonable accretion of knowledge from the mass of factual information. As a reference source it will prove invaluable. Whether one seeks data on the purely medical aspects of history or whether he seeks data on other phases of world progress this book will prove useful. I suppose that only a woman could be expected to have the patience and untiring energy to encompass so much in so little.

On the whole the book gives every evidence of careful preparation. It rarely departs from accepted historical teaching. It is a bit surprising to find syphilis included in the diseases of the twelfth century. I did not know that cancer of the breast was accorded surgical treatment in antiquity. Willis did not make a chemical test for sugar in the urine although he does seem to have been the first to employ its taste as a regular diagnostic procedure. Dr. Mead describes many hospitals of the Middle Ages in which the wards were light and airy, the beds devoted to a single patient, and in which some effort was made to remove accumulated filth. The conditions in the famous Hotel Dieu of Paris were as bad as those generally accredited to it.

Medical women did not confine their labors to midwifery. Indeed, Dr. Mead is at pains to differentiate between the midwife and the woman doctor, or doctress as she was sometimes known in the eighteenth century. Opportunity for study was limited. Most universities denied them admittance. Governments refused to recognize their qualifications to heal the sick although the payment of a large tax was well requitted. Women received much smaller fees than men. Much of their effort was devoted to obstetrics. Some of them practiced surgery and were occasionally widely acclaimed because of outstanding skill.

On the whole these women contributed little significant knowledge to medicine. They seem to have been good practitioners. In the Middle Ages they insisted that the accouchement should be done with clean hands. Yet they seem not to have correlated the later widespread incidence of puerperal infection with a departure from the traditions of their dead colleagues. Only two of them are singled out by Dr. Mead for consideration in separate chapters. These are Trotula of Salerno who lived in the eleventh century and Saint Hildegard of Bingen who lived a hundred years later. Both were voluminous writers but neither contributed any essentially new thought. The former advocated the remedies of an earlier era. She was one of the first to describe the new science of pediatrics. The latter was author of fourteen books, some of them philosophical in subject matter. These two with Lady Montagu, not a physician, who introduced the practice of inoculation against smallpox into England and who was greatly concerned over matters of sanitation constitute the three personalities who stand out in this whole history of women in medicine.

Regardless of the ultimate position assumed by women in the medical world, and it cannot be doubted that some of them have made highly significant contributions in recent years, it is good to have this book by Dr. Mead. She promises a second volume which will carry the history of women from the end of the eighteenth century to date. Yet, I cannot help but wish that in this second volume she would choose to build her story around a few of the outstanding personages of the period. While such a treatment might prove less valuable as a reference work it would serve to fix more firmly in mind the part played by women in medicine during the last hundred and forty years.

B. Y. G.

## ON UNMUZZLING THE PRESS

There are various groups of sincere people in this country who believe that good is good or bad is bad only as thinking makes it so. Theodore Schroeder of the New York Bar is one of these. For years he has been concerned with the dissemination of accurate information on sex to any one who would have it. In a 150 page brochure he extends his argument, seeks to prove that those who would gloss over the intriguing subject of sex are those whose lives live down some earlier misfortune in the field. Privately printed, it is called "A Challenge to Sex Censors" and is intended to serve as an introduction to a larger volume under the same title when a publisher can be found.

Highly glossed paper and a somewhat unusual style of type make reading difficult. Those who believe as the author will have no need for the book. Those who do not see eye to eye with him are not likely to be convinced by the antagonistic manner in which he approaches his subject.

B. Y. G.

## UNUSUAL HYPERTENSIVE RENAL DISEASE: I. OCCLUSION OF RENAL ARTERIES (GOLDBLATT HYPERTENSION): II. ANOMALIES OF URINARY TRACT

The problem of the precise nature of the relationship between renal disease and arterial hypertension has been brought nearer to a satisfactory solution by the work of Goldblatt and his associates. Louis Leiter, Chicago (Journal A. M. A., Aug. 6, 1938), reports unique clinical analogies to experimental renal hypertension and illustrates other types of somewhat unusual organic kidney disease associated with hypertension. His conclusions are that the pathogenesis of hypertension in patients with ordinary essential hypertension or chronic glomerulonephritis is unknown. However, it is possible to explain the elevated blood pressure in selected unusual cases of organic kidney disease in the light of recent experimental work. The clinical counterpart of the acute Goldblatt experimental hypertension is illustrated by a case of thrombo-arteritis obliterans of small renal arteries in a tabetic patient. Acute hypertension and failure of the left ventricle were present for several months without significant impairment of renal function. In another case, chronic arteriosclerotic occlusion of the main renal arteries was associated with chronic hypertension, renal insufficiency, retinal arteriosclerosis and contracted kidneys. Here, too, there is a close analogy to the Goldblatt experimental hypertension, with the added factor of excessive obstruction to renal blood flow and consequent atrophy of the parenchyma. Certain congenital anomalies of the urinary tract are apparently regularly associated with hypertension, while other types show a much lower incidence. With both types the kidneys may be markedly contracted. The reasons for the presence or absence of hypertension are unknown. Chronic pyelonephritis is commonly productive of hypertension. The exact mechanism is unclear. Careful clinical studies of the early stages of the disease in both children and adults are essential for the proper evaluation of the various factors involved in the relation between organic renal disease and hypertension.

Not only is cysticercus cellulosae rare but its lesions are so distributed, and at times so few, that premortem diagnosis is often extremely difficult. The condition may be revealed only at the necropsy table. The frequency with which cysticerci are found in the nervous system in those otherwise infested with the disease is reported variously by different authors. Clarence C. Hare, New York (Journal A. M. A., Aug. 6, 1938), reports two cases encountered at the Neurological Institute of New York.

## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.

Perry County Medical Society, December 4, 1937.

Ste. Genevieve County Medical Society, December 14, 1937.

Camden County Medical Society, January 7, 1938.

Webster County Medical Society, January 7, 1938.

Montgomery County Medical Society, January 14, 1938.

Dent County Medical Society, January 21, 1938.

Miller County Medical Society, February 8, 1938.

Moniteau County Medical Society, March 11, 1938.

Morgan County Medical Society, May 7, 1938.

Macon County Medical Society, July 30, 1938.

Pulaski County Medical Society, August 3, 1938.

Howard County Medical Society, August 5, 1938.

ASSOCIATE EDITORS: COUNCILORS OF THE  
TEN COUNCILOR DISTRICTS

#### FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR

##### Buchanan County Medical Society

The Buchanan County Medical Society was called to order at the John Wilcox Farm, July 6, by the president, Dr. G. T. Bloomer, at 8 p. m.

A letter was read from Dr. Harry E. Ungerleider, Assistant Medical Director of the Equitable Life Assurance Society, asking for a fee schedule. The president instructed the secretary to forward the fee bill.

Amendments to the by-laws presented at the meeting on June 1 were voted upon and unanimously adopted.

Dr. W. T. Elam, chairman of the joint committee of medical social service and state medicine, introduced the following resolution: "Resolved, That the Buchanan County Medical Society is advised to request that the Social Welfare Board reappoint the Medical and Surgical Staff as it now exists and that the members of these staffs be reappointed and that the members be permitted to select the hospital in which they indicate their preference to work."

This motion was withdrawn after Dr. Bloomer appointed the general staff executive and supervisory committee as follows: Drs. W. T. Elam, Chairman (1944); W. T. Stacy (1944); E. M. Shores (1943); L. Paul Forgrave (1943); A. J. Smith (1942); R. S. Minton (1942); C. S. Grant (1941); H. S. Conrad (1941); Jacob Kulowski (1940); J. H. Ryan (1940); O. W. D. Craig (1939), and Charles Greenberg (1939).

It was moved by Dr. W. T. Elam and seconded by Dr. E. M. Shores that the increase of the Cancer Committee's income tax, as a result of money from the State Cancer Commission which is given to the Buchanan County Medical Society, be taken care of by the Society.

It was moved and seconded that the president appoint a committee to work out a standard form for accident, health and all forms of insurance reports. Any further information than that included in the form must be paid for by the insurance company. The motion passed. The following committee was appointed: Drs. H. D. Kearby, chairman; R. S. Minton and L. J. Ferguson.

It was moved, seconded and carried that a committee be appointed to make any necessary revisions or additions to bring the by-laws up-to-date at the end of this year. The president appointed the following committee: Drs. O. E. Whitsell, chairman; M. H. Talty and R. Maxwell Day.

Dr. A. J. Smith moved and Dr. L. Paul Forgrave seconded that all political candidates of both parties be invited to attend the September meeting and express their attitudes toward organized medicine. The motion carried.

A motion passed to invite the wives of members to attend the August meeting which is to be informal and nonscientific.

The social part of the program arranged by the program committee was enjoyed by everyone.

#### Meeting of July 25

A called meeting of the Buchanan County Medical Society convened at the Missouri Methodist Hospital at 8 p. m., July 25, Dr. G. T. Bloomer presiding.

Dr. Ralph R. Wilson, Kansas City, Chairman of the Committee on Maternal Welfare and Infant Care of the Missouri State Medical Association, in a short résumé explained that several surveys had been made by non-medical groups and now the American Medical Association is carrying on a survey to obtain accurate statistics upon the question of medical care for the people of the United States.

Mr. E. H. Bartelsmeyer, St. Louis, Assistant Secretary of the Missouri State Medical Association, explained in detail the procedure by which this survey is to be conducted.

Dr. H. M. Griffith, Richmond, in a few brief remarks explained some of the efforts that his Society has made to further the interest of organized medicine in the state.

Other visitors were: Drs. A. S. Bristow, Princeton, Councilor of the First District; J. C. Hoshor and W. C. Myers, Savannah; Spence Redman, Platte City; F. E. Hogan and C. D. Perry, Mound City; W. Logan Wood, Bolckow; W. S. Wood, Edgerton; C. T. Marshall and I. E. Goldberg, Polo; V. R. Wilson, Rosendale; M. L. Holliday, Fillmore; O. C. Gebhart, Oregon, and W. B. Spalding, Plattsburg.

O. EARL WHITSELL, M.D., Secretary.

#### SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

##### Lafayette County Medical Society

The Lafayette County Medical Society, the Auxiliary and numerous guests met July 26 at the spacious home



of Dr. and Mrs. John A. Mann, Wellington, for an annual picnic. The lawn, electrically lighted, and tables agleam with lights and food made a beautiful setting for the congenial crowd.

Dr. and Mrs. Mann were gracious hosts. Dr. and Mrs. Frank Mann, brother of Dr. Mann, and other relatives and Dr. and Mrs. R. B. Watts, Wellington, assisted.

Among the guests were Dr. W. J. Frick, Dr. and Mrs. Paul F. Hunt, Dr. Claude J. Hunt, Dr. Evan S. Connell and Dr. W. Wallace Greene, Kansas City, and Dr. L. D. Greene, Richmond.

The meeting was in honor of Dr. John A. Mann. Dr. Claude Hunt paid a fine tribute of love and esteem to Dr. Mann which was followed by short talks by Dr. L. D. Greene, Dr. W. J. Frick, Dr. W. G. Harwood, Dover, and Mrs. J. W. Lightner. Dr. Mann responded briefly in a beautiful manner.

Dr. John A. Mann is the oldest physician in Lafayette County. He will be 87 years old at Christmas time. He has practiced at Wellington for approximately sixty years. He is the oldest member of the Lafayette County Medical Society having become a member after the Society was organized on November 3, 1879. He is a graduate of Washington University School of Medicine and first practiced at Sibley, Missouri. He later moved to Wellington and has been in practice there ever since. He has been president of the Wellington Bank for the last forty-six years, since his selection on April 21, 1893. He is the fourth oldest banker in Missouri. In the various activities in which Dr. Mann has been interested, he is not only known and beloved at Wellington but throughout the county and the state.

E. S. WALLACE, M.D., Secretary.

#### SEVENTH COUNCILOR DISTRICT

E. P. HELLER, KANSAS CITY, COUNCILOR

##### Medical Economic Security in Jackson County

The Jackson County Medical Society can announce a full service for patients in the county. Officers of the Society and members of the various committees have been at work on the several phases of the plan ever since it was endorsed by the Council two years ago in St. Louis.

1. We have had a satisfactory Central Index of Indigents for some years.

2. Our Business Bureau has functioned for all purposes for nearly a year.

3. Group Hospitalization is now a reality.

The Manager of our Business Bureau, Mr. W. H. Bartleson, makes the following statement: "The services offered by the Medical Business Bureau are increased as there is a demand. A complete accounting and auditing service is available at a nominal monthly charge. This service provides for ascertaining the accuracy of office receipts and disbursements, controls accounts receivable from patients, establishes records needed for tax purposes, supplies a monthly statement of earnings and expenses with details reflecting the business side of the practice. This is a splendid way for the physician to relieve himself of watching and worrying about his books. Let the Bureau do your worrying and you look at the monthly reports."

#### A. M. A. Survey on Need and Supply of Medical Care

Excellent cooperation on the part of members of the Society, members of the district dental society, the Council of Social Agencies and individual institutions has made it possible to secure a much better than average return on questionnaires forwarded to all individuals and institutions in Jackson County that have

to do with the distribution and administration of medical care and hospitalization of those unable to afford private care.

On the basis of our most recent summary, a return of approximately 75 per cent is indicated. The returns have not been completely analyzed therefore it is too early to determine definitely the exact status of need and supply. The returns do however indicate that facilities in Jackson County are adequate and that no one regardless of his financial status need suffer from lack of medical or dental care or hospitalization.

#### EIGHTH COUNCILOR DISTRICT

H. L. KERR, CRANE, COUNCILOR

##### Greene County Medical Society

The Greene County Medical Society met at the Colonial Hotel, Springfield, April 22, with thirty-one members present for a dinner meeting preceding the scientific program.

The scientific program began at 8 p. m. with one hundred fifty attending. In addition to the members of the Greene County Medical Society the meeting was attended by members of the Greene County Dental Society and physicians from surrounding county medical societies.

Dr. Vilray P. Blair, St. Louis, gave an interesting and instructive lecture and lantern slide demonstration on "Cancer of the Mouth." He discussed briefly the classifications of cancer occurring around the mouth. Dr. Blair emphasized the necessity of early diagnosis with immediate institution of proper treatment. He evaluated the therapeutic efficiency of cautery, knife, roentgen ray and radium. He showed slides of apparently hopeless cases treated with cautery and later plastic surgery done several years ago and the patients still have no apparent recurrence.

The Society was indeed fortunate to have Dr. Blair and appreciated his most excellent lecture.

##### Meeting of May 27

The Society met on May 27. Preceding the meeting a dinner was held at the Colonial Hotel for the guest speakers. The scientific meeting was held at the Shrine Mosque.

Dr. W. S. Sewell, Springfield, introduced the question of members of the Greene County Medical Society being listed as such in the next telephone directory. The secretary was instructed to inquire into the cost of the directory service.

Dr. W. S. Sewell discussed the problem of members delivering a radio address weekly under the auspices of the Society, the speaker being introduced merely as a member of the Society and not as an individual.

Dr. H. A. Lowe moved that the radio discussion be referred to the public relations committee for deliberation and a report at a later meeting.

Dr. Joseph W. Love announced the reorganization meeting of the Southwest Clinical Society to be held at the Kentwood Arms Hotel, Springfield, May 31, 1938.

The scientific program had been arranged by Dr. J. D. James.

Dr. W. P. Price, Professor of Obstetrics and Chief of the Gynecological Division of the University of Tennessee College of Medicine, Memphis, spoke on "Some Obstetrical Problems."

Dr. Barrett Sure, Ph.D., from the Department of Physiological Chemistry of the University of Arkansas, spoke on "The Role of Vitamins B<sub>1</sub> and C in Clinical Medicine."

Dr. Price gave a practical and instructive talk on the use of roentgen ray in obstetrics, especially in diagnos-

ing the position of the fetus and estimating the difficulty in time of labor. He discussed the technic of labor analgesia and the cause and treatment of retraction and contraction in uterine rings.

Dr. Sure gave a most interesting resume of the history, development and clinical use and interpretations of vitamins B<sub>1</sub> and C.

The Society appreciated the interesting and instructive program.

The next meeting of the Society will be a picnic sponsored by the Woman's Auxiliary in June, the last meeting until September.

J. L. JOHNSTON, M.D., Secretary.

## WOMAN'S AUXILIARY

### WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

17th Annual Meeting, St. Louis

President, Mrs. C. C. Tomlinson, Omaha, Nebraska.

President-Elect, Mrs. Rolla K. Packard, Chicago.

### WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

President, Mrs. Herbert L. Mantz, Kansas City.

President-Elect, Mrs. Paul F. Cole, Springfield.

September brings to the officers and committee chairmen of the Auxiliary the consciousness that new plans and goals must soon be launched for the year if we are to accomplish our program fully. So much more can be accomplished, and with much less effort, if before the re-assembling of the County Auxiliaries in October the foundation has been laid for the building of another year's program. The responsibility for this main structure is mine and yours, as state officers, and the county presidents and their chairmen. The development and ornamentation of all that is built will largely depend on the active enthusiasm of individual members. For that reason let us all bestir ourselves early to lend variety to each year by the use of new methods and personnel.

Our main objectives do not and should not change for we best serve our State Medical Association by remaining constant and loyal to it. However, our watchword for this year is "Organized Intelligence." There is a challenge there for us to increase activity within our organization to the extent that we grow not just in numbers but in power and usefulness because of greater knowledge of the pertinent problems that confront our doctors today. Can we remain uninformed and continue to be auxiliary to the medical profession?

Here in Missouri, we have particular advantages. It is possible to know each other fairly well for the boundaries of our state are not too distant nor our numbers too great. In addition we are again honored in entertaining the American Medical Association next spring in St. Louis. All this works for solidarity and friendship. When groups are united and friendly, they are happy in whatever they undertake. So, here's to 1938-39! May it be a happy year for it is "ours." Remember the words of the old Doctor in Ruth Mitchell Young's poem:

Go on, he said, "It's good and bad,  
It's hard, go on. It's OURS, my lad."

MRS. HERBERT L. MANTZ, President.

## BOOK REVIEWS

**TREATMENT IN GENERAL PRACTICE.** By Harry Beckman, M.D., Professor of Pharmacology at Marquette University School of Medicine, Milwaukee, Wis. Third edition revised and entirely reset. Philadelphia and London: W. B. Saunders Company. 1938. Price \$10.00.

This is an up-to-date catalogue on therapy. A remarkable bibliography supports each fact. All practitioners should use this book.  
W. Y. B.

**OPHTHALMOSCOPY, RETINOSCOPY AND REFRACTION.** With New Chapter on Orthoptics. By W. A. Fisher, M.D., F.A.C.S., Chicago, Illinois. Professor of Ophthalmology, Chicago Eye, Ear, Nose and Throat College, etc. Fourth revised edition. With 240 illustrations, including twenty-four colored plates. Chicago: H. G. Adair Ptg. Co. 1937. Price \$2.00.

The book on "Ophthalmoscopy, Retinoscopy and Refraction" has been revised to include chapters on optical devices used in exercising and straightening crossed eyes.  
A. W. M.

**CUTANEOUS CANCER AND PRECANCER A PRACTICAL MONOGRAPH.** By George Miller MacKee, M.D., Professor of Clinical Dermatology and Syphilology and Director of the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, Columbia University; and Anthony C. Cipollaro, M.D., Associate in Dermatology, Skin and Cancer Unit. With foreword by Francis Carter Wood. Two hundred and thirteen pages, with 245 illustrations. New York: The American Journal of Cancer. 1937.

The striking feature of this book is its photography. Dr. MacKee is known to command artistry of professional degree and it is perfectly evident here. With a brief statement of the statistical significance of cancer of the skin and mucous membranes, the authors take up successively the so-called precancerous dermatoses, carcinoma and sarcoma, classification and nomenclature and the established therapeutic methods. Under precancerous conditions they list: Cicatrix, cutaneous horns, erythroplasia, farmer's (sailor's) skin, keratoses (arsenical, seborrheic, senile, occupational from tar, pitch, etc.), kraurosis vulvae, leukoplakia, lupus erythematosus, lupus vulgaris, nevi, radiodermatitis, sebaceous cysts, syphilic (leukoplakia, glossitis, scars) chronic ulcers, von Recklinghausen's disease, and xeroderma pigmentosum. They discuss each of these topics without verbosity and with a disregard of debatable opinions which, in accompaniment with the handsome illustrations, make the text of exceptional value to the beginner. No effort is made to submit original concepts. Bibliographies are appended to each chapter and they are of such breadth and choice as might be expected of a scholarly dermatologist and pioneer in roentgen therapy and his protégé.

The specialist will learn little new but will be pleased with the regard shown for his time in the presentation of fundamentals in brief paragraphs, and he will admire the photography no end, both clinical and microscopic. The reviewer holds many opinions that differ with those expressed in the book but this is no place for airing them. The dynamic cellular interpretation of cancer which is slowing gaining ground these days comes in for little consideration, and the microscopist who, looking at dead tissue, asks, "What was going on here?" will be distressed by such statements as: "Frank epithelioma begins, as a rule, in the epithelial strands" (of senile keratoses, p. 31); or, concerning Padgett's intraepithelial carcinoma (p. 156), "There is marked



dyserkeratosis consisting of profound intracellular edema and degeneration." This is time honored description, but it is not interpretation.

Concerning grenz rays in the treatment of keratoses the authors say, "No one has as yet shown definitely that grenz rays have any special value over beta rays of radium or ordinary soft gamma rays and x-rays."

R. L. S., JR.

**THE LUNG.** By William Snow Miller, M.D., Emeritus Professor of Anatomy, University of Wisconsin. Springfield, Illinois, and Baltimore, Maryland: Charles C. Thomas. 1937. Price \$7.50.

The little volume gives a very complete discussion of the anatomy of the lung. The author's method of studying the lung anatomy by means of wax models greatly enlarged is original and unique. It is also very informative concerning the anatomy of the alveoli.

The publication adds much to our knowledge of the anatomy of the lung and is an epoch maker in this field. It will be of interest to every anatomist, physiologist and specialist in diseases of the lung. S. H. S.

**THE PRACTICE OF UROLOGY.** By Leon Herman, B.S., M.D., Professor of Urology, University of Pennsylvania, Graduate School of Medicine; Urologist to The Pennsylvania Hospital and to the Byrn Mawr Hospital; etc. Philadelphia and London: W. B. Saunders Company. 1938. Price \$10.00.

Of the recent books which have been published on urology, this one fulfills the need of a general reference book satisfactorily. For clarity and systematic presentation of material I believe it is the most readable of the books published in the last few years. It represents the personal opinions of the author with an accurate summary of the literature in each field. The first part on diagnosis is a concise, descriptive outline of cystoscopy and the various types of transurethral operations, urethroscopy, urography and various methods of urinalysis as applied to various requirements of urological diagnosis.

A short chapter on instruments in urological diagnosis is useful for any physician and particularly those who wish to gain an appreciation of diagnostic possibilities. The chapters deal with the kidney, ureter, urinary bladder, urethra, penis and scrotum, genitals, prostate gland, urolithiasis, urogenital tuberculosis and syphilis. Particularly commendable are his attitudes on renal and prostatic surgery, because of his sound surgical judgment for conservatism concerning the former and for his utilization of various surgical approaches for the belief of prostatism rather than applying one method to all cases.

The material is presented in interesting language and represents the results of years of careful and successful teaching. For this reason it will appeal to students reading urological literature for the first time, serve as a useful guide to intern and general practitioner and is a valuable reference book for the library of the urologist. A. L. S.

**ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY** of the American Medical Association for 1937, With the Comments That Have Appeared in *The Journal*. Pp. 201. Chicago: American Medical Association. Price \$1.00.

This book is a great deal more than a mere record of the negative actions of the Council on Pharmacy and Chemistry. It gives in full the reasons for the Council's rejection of various preparations, but it also records results of the Council's investigations of new medicinal

agents not yet out of the experimental stage, and frequently contains reports on general questions concerned with the advance of rational drug therapy. All three categories of reports are represented in the present volume.

This issue of the Reports is remarkable for the series of valuable status and preliminary reports published by the Council in the past year. These include the reports on Avertin with Amylene Hydrate (now accepted for New and Nonofficial Remedies), Benzedrine Sulfate (the active constituent of the notorious "pep" pills but a promising drug when its limitations are recognized), Catgut Sutures (a survey of the sterility of the market supply), Evipal Soluble (a comprehensive review of the evidence for the usefulness and limitations of the drug), Histidine Hydrochloride (a study of the usefulness of the drug in peptic ulcer, to be considered in connection with the report rejecting Larostidin, a proprietary brand, for unwarranted and exaggerated claims), Mandelic Acid (an authoritative statement of the limitations of this drug which the Council has now accepted), and Vinethene (a careful study of the evidence for the drug, which the Council has accepted for one year as an anesthetic to be used in short procedures).

Other notable reports of outright rejection of products are those on Causalin (Causyth), an unsafe and dangerous preparation proposed for used in arthritis; Glutamic Acid Hydrochloride-Calco, proposed as a conveyor of hydrochloric acid, with unsubstantiated claims of clinical effectiveness; Larodon "Roche" proposed as a substitute for other well established analgesic and antipyretic drugs and marketed with exaggerated and unwarranted claims.

Two reports on Sulfanilamide appear, a nomenclature and status report together with reprints of *The Journal* editorials giving the warnings which, if obeyed, would have avoided the series of deaths which resulted from the marketing of the ill-fated Elixir of Sulfanilamide-Massengill.

At the end of this volume appears a eulogy of George Henry Simmons whose death deprived the Council on Pharmacy and Chemistry of its founder and American medicine of a worthy and faithful servant.

**MEDICAL WRITING. The Technic and The Art.** By Morris Fishbein, M.D., Editor, *The Journal of the American Medical Association*, Chicago. With the assistance of Jewel F. Whelan, Assistant to the Editor. Chicago: Press of the American Medical Association. 1938.

The ability to write well may be cultivated by the reading of good literature and assiduous practice. These two exercises, however, are but steppingstones to success in the field of composition. Given a basic aptitude or inclination toward writing, multitudinous details of technic must be learned. Dr. Fishbein presents the result of his extensive experience in the field of medical editing, elaborating upon similar previous publications of the Association under the same general title.

While style cannot be taught, any aspirant to the medical literary field can present an acceptable paper. He can utilize proper methods of constructing his articles. He can learn to discriminate between words, choosing those which convey most clearly his meaning. Even if he has difficulty with some phases of composition leading to the completion of a medical paper he can, at least, spell and capitalize and abbreviate correctly. Most of all, he can submit a proper bibliography. In general Dr. Fishbein warns against the inclusion of too much bibliographic material in the average manuscript.

The physician who seeks to improve upon his literary efforts will find much of immediate application in "Medical Writing." B. Y. G.

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### OBESITY IN THE ADULT

AUGUST A. WERNER, M.D.

AND

DON C. WEIR, M.D.

ST. LOUIS

Obesity is a condition in which excessive amounts of fat are stored in various parts of the body. The maintenance of a constant body weight by most individuals under varying degrees of activity and consumption of food is an interesting phenomenon. Two persons may eat food similar in kind and amount and one becomes obese while the other remains normal in weight. Again many thin persons who are apparently healthy do not gain weight on increased food intake.

McCallum<sup>1</sup> has described the changes in the tissues in obesity. There is deposition of fat in the subcutaneous and intramuscular tissues, mesentery, omentum, retroperitoneal tissue, bone marrow, epicardium, kidney and orbit. In very fat persons it infiltrates the heart muscle and appears underneath the endocardium.

#### HAZARDS OF OBESITY

Physicians, insurance writers and the public are becoming increasingly conscious of the hazards of obesity. Obese persons are physiologically and economically impaired. Fat not only limits their activity but disturbs cell metabolism and mechanically puts a great strain on the cardiovascular system, especially the heart. The capillary bed is enormously increased, thus causing resistance to the flow of blood and slowing the circulation in the periphery with increased cardiovascular tension. The heart hypertrophies and upon moderate effort the patient complains of dyspnea, palpitation, fatigue, vertigo and headache.

Master and Oppenheimer<sup>2</sup> made a study of the effects of obesity on the cardiovascular system of ninety-seven patients. Among other things they found "that 67 per cent of the cases showed hypertension with an accelerated pulse rate commonly

present. In general, the more the overweight the greater the hypertension. With a loss of weight a corresponding fall in blood pressure and pulse rate occurred. With advancing years the blood pressure of obese patients increases. Apparently, the longer the duration of the obesity the higher the blood pressure.

"The roentgenograms show a sthenic or hypersthenic habitus, elevation of the diaphragm and an enlarged, widened heart with a hypertrophied left ventricle and a hazy lower left border obscured by apical pericardial fat. The electrocardiograms also showed characteristic changes from the normal."

The life expectancy of overweight, middle aged persons is markedly shortened due to a predisposition to hypertension, cardiac failure, biliary tract disease and diabetes. Bauman<sup>3</sup> states "of the last 215 patients with cholelithiasis on whom operation was performed at the Presbyterian Hospital (New York) 88 per cent were overweight."

Joslin<sup>4</sup> states that 78.5 per cent of the males and 83.3 per cent of the females among diabetic patients are overweight, and the death rate of diabetic patients increases with the degree of overweight.

John<sup>5</sup> found nearly three times as many diabetic curves in obese patients as in patients of normal weight in a series of 459 cases tested. In 528 cases of diabetes investigated, he found that more than three fourths of these patients were or had been overweight before the diabetes developed. These and other similar findings should impress upon the physician the serious consequences of obesity to the health and longevity of the individual.

#### BASAL METABOLIC RATE

The consensus is that the basal metabolism of obese adults is not inherently changed except in the group with hypothyroidism. Of the twenty-one patients of our group whose basal metabolic rates were determined, ten were between 0 and plus 10 per cent; four were between plus 11 and plus 14 per cent and seven were between 0 and minus 10 per cent. All were within the standard limits of normal (minus 10 to plus 10 per cent) except four who were slightly above the plus normal. The author has observed that while most obese adults have basal metabolic rates within normal limits (except

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Read at the 81st Annual Session of the Missouri State Medical Association, Jefferson City, May 2-4, 1938.



hypothyroid cases), they can take from 1 to 3 grains of desiccated thyroid daily without developing symptoms of hyperthyroidism such as acceleration of the pulse, tremor and sweating.

#### ETIOLOGY OF OBESITY

Some writers believe that there is no specific metabolic abnormality in obese persons. All obesity is "simple obesity" and the increase in weight merely represents an inflow of energy (food) greater than the outflow. This theory does not take into consideration certain glands and structures which influence among other things metabolic rate, fat metabolism and water balance in the body.

The effect of the thyroid gland on metabolism is well known. Hyperthyroidism increases oxidation in the tissues, raises the metabolic rate and causes loss of weight. Hypothyroidism produces the opposite effect.

Raab,<sup>6</sup> experimenting with dogs, came to the conclusion that the hypothalamus contains the fat regulating center. Destruction of the tuber cinereum or severance of the nerve pathways between the hypothalamus and the liver in dogs results in a marked increase in the circulating neutral fat which ordinarily is absorbed and metabolized by the liver. Raab also showed the dependence of the fat-regulating center in the hypothalamus upon a normal supply of pituitrin. The subcutaneous injection of several cubic centimeters of pituitrin caused the complete disappearance of the neutral fat from the blood. One tenth of the subcutaneous dose of pituitrin if injected into the brain ventricles produced the same effect. If, however, the tuber cinereum is mechanically destroyed or if the nerve pathways between the tuber cinereum and the liver are severed, the injection of pituitrin has no effect upon the reduction of the circulating neutral fat.

Raab concludes that "pituitrin promotes the absorption and destruction of circulating fat by the liver through nervous pathways, starting in the tuber cinereum and running through the cervical spinal cord and the abdominal splanchnic to the liver. Any disturbance of the cooperative pituitary-mesencephalic system would lead to a retention of excess fat amounts in the body and thus lead to obesity." This experimental work explains, at least in part, the development of obesity in patients having lesions associated with decrease in function or hypofunctional disorder of the posterior pituitary.

It has long been known that the posterior pituitary exercises an influence on water balance in the tissues. Kamm<sup>7</sup> and his associates isolated two active principles of the posterior pituitary which they named pitressin and pitocin. Among other effects of pitressin it prevents excessive loss of water from the body tissues.

Ranson, Fisher and Ingram<sup>8</sup> have shown that the flow of water through the kidneys is controlled by an antidiuretic hormone formed in the neural division of the hypophysis (posterior pituitary).

This part of the hypophysis is innervated by a tract of nerve fibers which reaches it from the hypothalamus. Interruption of this tract in the hypothalamus causes atrophy of the neural division of the hypophysis and absence of the antidiuretic hormone. Diabetes insipidus results from this sequence of events and also results when the neural division of the pituitary is removed leaving the anterior pituitary intact. In man, diabetes insipidus develops when the tract, going to the hypophysis, is interrupted in its course close to the base of the brain by traumatic injury or inflammatory lesions and when tumors selectively destroy the neural division of the hypophysis.

#### TYPES OF OBESITY

Obesity has been divided into two forms with relation to etiology, viz., exogenous and endogenous.

Exogenous or nonendocrine obesity is attributed to excessive ingestion of food and sedentary habits in a supposedly otherwise normal individual. In other words, the caloric intake exceeds the energy output.

Endogenous obesity usually results from some functional imbalance of one or more endocrine glands the secretions of which influence metabolism. It is probable that in many instances both exogenous and endogenous factors may contribute to the production of obesity in the same individual, but in the final analysis most cases of obesity are probably attributable to endocrine disturbance of metabolism.

Endocrine obesity arises most commonly in association with hypofunction of the posterior pituitary, thyroid and gonads. Obesity occurs in some types of functional disorder of the adrenal cortex in which condition there may be evident involvement of the pituitary and the sex glands. When obesity occurs with adrenal cortex dysfunction it probably is not due to this gland, per se, but is the result of a suppression of pituitary and ovarian function, as evidenced by obesity and amenorrhea in the female.

The great majority of obese adults may be classified endocrinologically into three types depending upon clinical findings and the distribution of adipose tissue. These three types are the hypopituitary, the hypothyroid and the hypogonad. While there are other types of adult obesity such as adiposis dolorosa and lipodystrophia progressiva, these will not be considered because of their rarity and because no such cases are included in this report.

#### ADULT PITUITARY OBESITY

Adult pituitary obesity manifests itself by shoulder and pelvic girdle adiposity. Persons with such obesity have large busts and hips. They have peg top upper arms and thighs. In the upper arms the fat deposit extends over the shoulders tapering downward to about the middle one third of the upper arms. In the thighs this fat deposit fuses above with the pelvic girdle obesity tapering downward to about the middle one third of the thighs.

The remaining portions of the extremities, lower one half to two thirds of the upper arms and thighs and the forearms, legs, hands and feet, are comparatively free of fat. The face and neck are round but not boggy with fat. The faces of these people are usually pretty, especially in adolescence and early adult life. Everyone has noticed fat people of this type and has been filled with wonder by the distribution of this obesity.

#### THYROID OBESITY

People with thyroid obesity are fat "all over," so to speak. Unlike the pituitary type they have fat legs and forearms and cuffs and folds of adipose tissue lying in rings about the wrists and ankles. The hands show dorsal padding with dorsal pads on the first and second phalanges. The terminal phalanges are not tapering as in the juvenile pre-adolescent hypopituitary type.

Another characteristic of thyroid adipose distribution is dorsal neck padding. There is a large pad of fat with its central part situated approximately over the spine of the seventh cervical vertebra.

Supraclavicular padding is another characteristic. Instead of the supraclavicular fossae being level or full or a bit sunken, they are bulging with large soft pads of fat.

Again we may find a cervical collar of fat extending around the neck most noticeable laterally and just below the thyroid notch. I have seen this collar mistaken for a goiter on several occasions.

The face in thyroid obesity is more boggy than in the pituitary type. There is more of a tendency toward obliteration of the facial lines.

It may be well to mention some fat deposits which are not especially characteristic of any type of obesity but which are found in all, depending on the extent of adiposity. Among these are the abdominal panniculus or apron, the axillary folds and the rolls of fat above the waist line.

#### GONAD OBESITY

Gonad obesity always arises from hypofunction or afuction of the ovaries in the female or the testes in the male.

Gonad obesity manifests itself by padding over the greater trochanters, mons veneris and adipose enlargement of the breasts. Of these three locations, greatest consideration and diagnostic dependability must be placed upon the trochanteric deposit. While mons veneris and mammary fat deposits are found in most instances when gonad obesity develops, they also occur together with almost any type of obesity. Especially are the breasts and abdominal wall subject to adipose infiltration. Trochanteric adiposity usually does not develop until after the ages of from 27 to 30 years.

#### STUDY OF SEVENTY-SEVEN OBESE ADULTS

This report covers the data and treatment of seventy-seven obese adults, all women except one. All had the pituitary type of obesity except two who had a combination of the pituitary and thyroid

types. Twenty women were in the climacteric and five were castrates. The youngest patient was aged 14 years and the oldest 55 years with an average age of 34.4 years.

The maximum and minimum weights before treatment were 320 pounds and 148 pounds, the average weight being 213 pounds. The average duration of treatment was 4.6 months. The average loss of weight was 30.3 pounds per person and the total loss of weight for the group of seventy-seven persons was 2333 pounds.

Table 1. Summary of Cases

Name	Original Weight	Present Weight	Loss of Weight	Duration of Treatment	Age
M. W.	194	180	14	4 mo.	38
E. H.	228	196	32	6 mo.	39
M. V.	199	165	34	4 mo.	45
I. G.	225	189	36	6 mo.	26
M. C.	298	245	53	6 mo.	48
T. E.	207	182	25	1½ mo.	24
B. M.	190	160	30	1½ mo.	29
M. T.	183	131	52	9 mo.	29
L. C.	238	207	31	8 mo.	33
D. K.	210	185	25	9 mo.	14
M. S.	269	240	29	3 mo.	55
H. B.	209	190	19	5 mo.	27
L. B.	196	169	27	7 mo.	37
M. F.	206	170	36	4 mo.	34
E. K.	200	180	20	4 mo.	26
G. W.	158	136	22	4½ mo.	19
M. H.	192	165	27	2½ mo.	33
C. S.	226	194	32	5 mo.	35
S. S.	252	183	69	8 mo.	34
V. K.	209	182	27	3 mo.	31
B. B.	198	174	24	3 mo.	39
L. E.	260	240	20	4 mo.	37
A. P.	185	163	22	4 mo.	31
D. B.	217	210	7	1 mo.	20
V. E.	255	229	26	5 mo.	32
R. V.	245	230	15	2½ mo.	33
V. S.	320	225	95	13 mo.	23
C. M.	220	159	61	15 mo.	44
G. S.	175	159	16	4 mo.	33
M. E.	224½	188	36	4 mo.	22
F. R.	190	169	21	3½ mo.	36
E. S.	196	160	36	6 mo.	30
E. F.	204	148	56	11 mo.	34
E. C.	215	193	22	2 mo.	48
M. B.	282	222	60	1 yr.	31
E. K.	148	124	24	6 mo.	39
H. K.	155	137	18	3 mo.	47
I. A.	235	204	31	1½ mo.	19
E. H.	237	216	21	3 mo.	30
H. R.	181	165	15	3 mo.	34
L. S.	189	182	7	3 wk.	32
M. J.	210	163	47	4 mo.	25
R. B.	186	163	23	3 mo.	33
H. B.	242	227	15	5 mo.	38
A. I.	264	190	74	10 mo.	16
B. P.	179	159	20	2 mo.	46
R. S.	170	162	12	3½ mo.	48
G. L.	197	167	30	4 mo.	27
F. M.	162	148	14	3 mo.	27
L. C.	212	190	22	2½ mo.	26
W. S.	193	179	14	2 mo.	24
E. A.	152	142	10	1 mo.	43
E. S.	185	169	16	3 mo.	33
M. A.	200	182	18	5 mo.	42
S. K.	230	180	50	4 mo.	38
M. R.	234	220	14	1 mo.	43
E. B.	210	177	33	1½ mo.	30
E. R.	250	189	61	14 mo.	43
H. B.	209	174	35	3 mo.	38
W. R.	180	160	20	6 mo.	38
L. W.	160	126	34	5 mo.	27
L. F.	250	220	30	4 mo.	46
N. N.	160	131	29	7 mo.	28
J. N.	235	193	42	5½ mo.	42
J. M.	165	143	22	5 mo.	52
F. K.	215	173	42	4 mo.	39
E. G.	250	220	30	4 mo.	42
P. C.	183	167	16	5½ mo.	32
M. C.	220	189	31	4 mo.	24
C. B.	305	280	25	3½ mo.	27
A. B.	225	211	14	2 mo.	42
J. B.	266	247	19	2 mo.	37
M. B.	290	236	54	1 mo.	34
L. B.	222	165	57	8 mo.	42
C. B.	194	157	37	3 mo.	29
A. P.	184	159	25	5 mo.	38
N. D.	233	216	17	1 mo.	28



## TREATMENT

These patients were treated at the Endocrine Clinic, St. Louis City Hospital. They received 1 cc. pituitrin (obstetrical) twice weekly, injected into the middle third of the triceps muscle.

Thyroid desiccated, 3 grains daily, was given except in a few the dose was 1 or 2 grains daily depending upon the individual response to the medication.

These patients were told how to eat. No diet list was given for most people will not follow a difficult diet list unless they are diabetic, and then in some instances they break away from it. Verbal instructions on diet were as follow:

**Breakfast.**—A small orange, one half small grapefruit or a small dish of any fruit available. Two pieces of any kind of bread or toast with a thin layer of jelly. One cup of coffee or tea with skimmed milk and a level teaspoonful of sugar if desired.

**Luncheon.**—An egg or lean meat sandwich made with two pieces of bread. Lettuce, cole slaw, radishes or celery may be eaten with this. A cup of coffee or tea as for breakfast may be taken.

**Dinner.**—An ordinary helping of whatever is served for dinner about as follows: a piece of meat the size of an ordinary lamb chop; two slices of bread; one medium sized potato; a generous helping of a vegetable low in carbohydrates such as carrots, turnips, radishes or cabbage; one sixth piece of pie or jello; one cup of coffee or tea with level teaspoonful of sugar. Vinegar, salt and pepper may be used. No fats are allowed such as butter, cream, ice cream and fat on meat. Fresh pork is not permitted. Water may be taken as desired but beer, liquors and soft drinks are prohibited.

This kind of diet is easily followed if the patient is sincere and allows from 350 to 400 calories for breakfast, from 350 to 400 calories for luncheon and about 650 or 700 calories for dinner, the total daily food intake being approximately from 1350 to 1500 calories.

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For the ideal type of information needed to answer the question of the human requirement for vitamin B<sub>1</sub> it was of course necessary to await isolation of the factor in pure form and tests of it on the human species, something accomplished only recently. It has not as yet been possible to make as many tests with the pure vitamin as might be desired, but these may reasonably be expected in the near future. George R. Cowgill, New Haven, Conn. (Journal A. M. A., Sept. 10, 1938), presents a formula which indicates that the value of the vitamin B<sub>1</sub>: calory ratio increases with increase in body weight.

## INTERMENSTRUAL PAIN

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As early as 1847 Pouchet<sup>1</sup> wrote of a patient who complained of a feeling of heaviness and of moderately severe pain of one to two days' duration occurring at the intermenstrual period which he attributed to contractions of the fallopian tubes. In 1872 Priestley<sup>2</sup> made the bold assertion that intermenstrual pain was due to ovulation, a view that was later shared by Storer<sup>3</sup> who in 1900 gave a comprehensive report on twenty cases in which there were two instances of alternating pain. A third theory among the earlier observers as to the underlying cause of this pain was that of uterine contractions, which gained attention because of the scattered reports of relief following hysterectomy. "Mittelschmerz" was the term applied by German writers to this condition, but other than its occurrence at the intermenstrual period nothing definite was known of its cause until the mechanism of menstruation became better understood.

Modern endocrine research has shed much light on the phenomenon of ovulation. In 1923 Corner<sup>4</sup> reported his observations on the *Macacus rhesus* whose menstrual cycle he found to parallel that of the woman. He found ovulation to occur twelve to thirteen days before the expected onset of menstruation, basing his conclusion on the actual recovery of the ova from the tubes, the presence of freshly ruptured follicles in the ovary and the state of the endometrium. Allen, Pratt, Newell and Bland<sup>5</sup> in 1928 recorded the recovery of seven unfertilized ova from the fallopian tubes of six women on the twelfth, fifteenth and sixteen days of the menstrual cycle. In all cases they found freshly ruptured mature graafian follicles, or early ruptured corpora lutea, depending on the age of the ovum. At about the same time Simpson and Evans<sup>6</sup> reported finding microscopic bleeding in a woman 32 years of age occurring regularly and periodically over a twenty month period. Hartman<sup>7</sup> working with monkeys confirmed the observation of Simpson and Evans that bleeding may occur at the time of ovulation for he found intermenstrual bleeding in an incidence of 75 per cent. He found ovulation in half of the animals on the eleventh and twelfth days and in the remainder between the seventh and eighteenth days. Paponicolau,<sup>8</sup> in a series of patients, found gross vaginal bleeding in 9.3 per cent on the twelfth day and 4.3 per cent on the thirteenth day. Microscopically he found blood in 18.6 per cent on the twelfth, 15.2 per cent on the thirteenth day and 23.8 per cent on the fourteenth day.

From these and confirmatory investigations it became an accepted fact that ovulation occurs in women between the seventh and twenty-second day

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of the cycle, usually in the middle, and that as a rule it precedes menses by a definite number of days. Furthermore, it has been established that ovulation might be attended by slight bleeding or a slight discharge.

With the knowledge that intermenstrual pain and ovulation are synonymous in their time of occurrence, continued effort has been expended with the idea of gathering sufficient criteria for determining with exactness the time of ovulation. Accordingly Burr, Hill and Allen<sup>9</sup> mated rabbits and six hours later anesthetized them with sodium amytal. Walton and Hammond<sup>10</sup> had previously worked out ovulation in rabbits showing that it occurred about ten hours after mating. A salt bridge leading to a silver-silver chloride electrode was placed on the shaven abdomen of the rabbit and a second salt bridge led from a glass cannula in the vagina to another silver-silver chloride electrode. Leads from the two electrodes were connected to an instrument designed by Burr, Lane and Nims for the purpose of recording differences in electrical potential. Observations were made of changes in electromotive force preceding and during the known period of ovulation. They found changes indicating with accuracy the time and duration of ovulation, the instant of follicular rupture and the exact number of ovulations. Reboul<sup>11</sup> and coworkers confirmed the work of Burr, Hill and Allen and added the knowledge that such measures as handling the ovary with gloved fingers, manual rupture of an ovarian follicle and dropping on the peritoneum from a pipette follicular fluid, 10 per cent potassium chloride, or physiological salt solution, failed to effect any similar recording. Rogers<sup>12</sup> studied the electric potentials in normal, castrate and theelin-treated rats, summarizing his findings as follow: "... in normal rats the difference in electrical potential between the symphysis pubis and the vagina is much greater at estrus than during the rest of the cycle. Readings from castrate animals form a patternless type of curve. Administration of theelin causes two rises in potential, nineteen hours after the first injection and just before the animal passes out of estrus."

This experimental work finally led to clinical trial by Rock, Reboul and Wiggers<sup>13</sup> who applied this plan to a 34 year old woman and found voltage changes on the fourteenth day of the cycle and about fourteen days before an expected catamenia. A laparotomy performed about fourteen hours after this change was recorded disclosed a freshly ruptured follicle. Burr and coworkers duplicated this procedure confirming their findings by laparotomy and demonstrating a freshly ruptured follicle.

Thus it appears that by the Burr-Lane-Nims<sup>14</sup> technic it is possible to record accurately the voltage changes indicative of ovulation. While of great interest it has its practical limitations and until more widely used it is of little value as a diagnostic aid. Of more practical value is the report by Séguy and Simmonet<sup>15</sup> of the appearance of a thick,

translucent shiny secretion in the cervix at the time of ovulation. They also found the titer of estrogenic substance highest at this time. Four of five women operated on by them at the time of high estrogenic titer, and at the time of cervical discharge appearance, were found to have ripe graafian follicles, and in the fifth the ovary contained a small immature follicle. Within the last few months Rubenstein<sup>16</sup> has reported his studies on the basal body temperature and the basal metabolic rate during the menstrual cycle. He found a wide fluctuation of the basal metabolic rate during the menstrual cycle, the lowest values occurring just before the midperiod or about the thirteenth day of a twenty-eight day cycle. He found the basal body temperature to vary in the same way, the low point coinciding with the most highly cornified vaginal smear.

These studies on ovulation have led to a better understanding of the ovulatory period and of intermenstrual pain. When the pain is only of slight or moderate degree the patient can be observed from month to month so as to establish its rhythmicity and regularity, which are the chief diagnostic points. When the pain is acute, however, considerable responsibility is placed on the physician as to the proper diagnosis. The acute type may resemble (1) acute appendicitis when the pain is in the right side; (2) the pain encountered in a twisted ovarian pedicle; (3) an ectopic pregnancy especially if there is accompanying bleeding.

Evidence of the difficulty in the differential diagnosis is borne out by two convincing reports of sizable series. Hoyt and Meigs<sup>17</sup> reported a series of fifty-eight cases of acute conditions in the abdomen that had been operated on and found to have ruptured graafian follicle or ruptured corpus luteum as the cause of the acute pain. Twenty-six of the fifty-eight cases had never had a previous attack. In seventeen instances the correct diagnosis had been made preoperatively.

Wharton and Henriksen<sup>18</sup> collected a total of sixty-one cases, thirty of which had undergone laparotomy for various reasons. Twenty-one of the thirty were operated on during the acute pain with the finding of normal tubes and appendices in every instance. Eleven of the twenty-one with acute pain had the pain on the right side, six on the left and in four the pain was bilateral. In one instance in which intra-abdominal blood was found the white count was 27,000. In another instance the leukocytes numbered 22,000 without free abdominal blood.

The writer has observed six patients with this entity, five of whom had been operated on for appendicitis because of pain in the right side. In the sixth instance, where the pain was in the left side, an operation for a twisted ovarian pedicle was performed. In this latter instance and in one other, the surgeon had informed the patient of his error in diagnosis and in the other four the continuation of the pain at the intermenstrual period leaves little doubt as to the correct diagnosis. When these pa-



tients were informed that their pain would in all probability persist they became resigned to it and their concern over this distressing symptom was greatly lessened.

Because of the persistence of pain one of the six patients had in turn had an appendectomy, right oöphorectomy, hysterectomy and partial left oöphorectomy before the age of 30. Needless to say her stability was so shattered that subsequent attacks of pain on the left side were accompanied by emotional explosions.

In one case, seen but not operated on, the patient showed a white count of 15,000, but from the history of repeated attacks occurring from one to two weeks before the period operation was not performed. This patient had subsequent attacks which eventually stopped, as is characteristic of the condition.

The diagnosis of intermenstrual pain of mild to moderate degree can be established in most instances by a sufficient period of observation. With a knowledge of the time of ovulation, the repeated occurrence of pain at this anticipated period establishes the diagnosis with relative ease. A study of the vaginal smears throughout various periods of the month is of further aid, for at the time of ovulation the epithelium is most highly cornified. The determination of the daily temperature as suggested by Rubenstein is of value, the low point in the temperature curve being recorded at the time of ovulation. The finding of blood by vaginal washings lends further aid, and when gross bleeding occurs the time relation of ovulation is easily established. Where ectopic pregnancy might be a possibility, vaginal bleeding may cause considerable concern in the acute type, although in the case of ovulation there is less hemorrhage than might be expected with ectopic pregnancy and the shock is less severe. When the pain is of an acute nature and confined to the right side it requires a great deal of confidence on the part of the physician to stand firm on the diagnosis of intermenstrual pain. It is far better in these cases to operate for acute appendicitis than to permit it to occur and go untreated. However, if one does not find an acute appendicitis but does find a recently ruptured graafian follicle or corpus luteum he should advise the patient of his findings so that a recurrence of the pain will not cause mental anguish and perhaps further needless surgery.

As to treatment, many measures have been advocated which include dilatation and curettage, oöphorectomy, uterine suspension, insertion of pessary, bed rest and hysterectomy. Any major procedure such as oöphorectomy or hysterectomy should be avoided since the majority of patients are below the age of 30. All these measures have failed to give any consistent relief, and it must be remembered in those instances which have been reported to have been relieved by certain measures, spontaneous remission of the pain does occur and may have been the factor in bringing about relief.

A study of the endocrine system with correction of the disorders that prevail is a conservative plan of treatment that offers possibilities. In one patient with thyroid deficiency, the addition of desiccated thyroid relieved the woman of her intermenstrual discomfort; and in another instance in which oligomenorrhea prevailed, combined use of the gonadotropic hormone of the anterior pituitary and the follicular hormone gave distinct relief. An understanding of the origin of this pain by the physician and his assurance to the patient that the pain is not serious and will ultimately subside will often give surprising aid. It will save both patient and physician the disappointment that follows surgery. It is reiterated that in the acute cases it is far better to operate and be in error than to allow an acute surgical condition in the abdomen to go improperly treated.

#### SUMMARY

Experimental and clinical evidence from the literature is reviewed to show the time of ovulation and the association of intermenstrual pain and ovulation.

In establishing the diagnosis in the mild type the regular recurrence of the pain at the intermenstrual period is the best criterion. Other suggested diagnostic measures are recording the daily basal temperatures, the low point in the curve coinciding to the time of ovulation; periodic vaginal smears throughout the intermenstrual period with the finding of the most highly cornified epithelium at ovulation, and the occurrence of vaginal bleeding grossly or its detection by vaginal washings.

In the acute type the pain must be differentiated from acute appendicitis, ruptured ectopic pregnancy and twisted ovarian pedicle. Laparotomy is by far the choice of procedure when there is any doubt as to the diagnosis.

Intermenstrual pain may suddenly cease which makes it difficult to evaluate the advocated therapeutic measures. Correction of endocrine dysfunctions particularly, and of all other systemic disturbances which may lower the resistance, together with freedom from physical strain during the period of pain, are conservative measures which offer therapeutic possibilities.

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DISCUSSION

DR. M. PINSON NEAL, Columbia: Acute peritoneal irritations characteristically give the hyperleukocytosis recorded by the essayist in several of the cases cited. This high total white blood cell count should not be relied upon to differentiate between hemorrhages as cited, pyelitis, or other acute abdominal inflammations as appendicitis, salpingitis or peritonitis. The differential leukocyte count with a rise in polymorphonuclear neutrophil percentage and a fall in the percentage of the polymorphonuclear eosinophils or their disappearance, is a dependable guide to acute pyogenic infections. The rise in neutrophil percentage is more or less in keeping with the degree, dose and virulence of the infection. So long as the infection remains the neutrophil percentage values persist at high levels with the eosinophils being greatly decreased or absent. To this condition is applied the term "septic factor" by Simons. The total white blood cell count and differential percentage to receive their greatest values for interpretation in pyogenic infections should be repeated at two to three hour intervals.

The essayist very properly emphasizes the importance of exploratory operations where doubt cannot be otherwise removed. The suspected disease may not be found but oftentimes other lesions are determined and their correction made possible by such investigations.

DURATION OF SMALLPOX IMMUNITY

In 1936 a study was made of smallpox immunity in 1,053 matriculating college students at Kansas State College. In September 1937, David T. Loy and M. W. Husband, Manhattan, Kan. (*Journal A. M. A.*, Aug. 27, 1938), made a similar investigation of 986 students with additional data on the duration of smallpox immunity and the effect of multiple vaccinations. In summary they state: 1. Of the students who matriculate at Kansas State College (a) approximately one fourth have never been vaccinated against smallpox and (b) approximately two thirds are in some degree susceptible to smallpox. 2. Only 5.9 per cent of the 1937 group had been vaccinated more than once previously. 3. There are about 20 per cent more persons with complete immunity in the previously vaccinated one to five year group than in the group vaccinated from six to ten years previously. 4. There are about 20 per cent more persons with complete immunity in the multiple previously vaccinated group than in the once previously vaccinated group. 5. The method of noncompulsory vaccination used has proved to be almost 100 per cent acceptable to the student group.

FAT EMBOLISM

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AND

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The clinical diagnosis of fat embolism presents a difficult and intriguing problem. As the name implies, the condition is produced by an embolus of free circulating fat. The symptoms are those of multiple embolism plus those disturbances resulting from lipemia.

The case described presents a group of scattered findings which fit perfectly a widely diffused embolism. Of especial interest are the symptoms of severe transient myocardial disturbance.

REPORT OF CASE

A young man had a serious automobile accident. He was badly shaken up and sustained a fracture of the right femur. Twenty-four hours after the accident he was brought to Kansas City, a distance of one hundred miles. An open reduction was done by the orthopedist with good results. The boy was in excellent condition for four days when he developed a group of alarming symptoms. He suddenly became very weak, complained of marked air hunger and severe precordial distress. He felt light headed and a little later he became very dizzy, especially on turning his head; increasing abdominal distention appeared without apparent cause; a moderate febrile reaction occurred lasting a few days. Internal hemorrhage was suspected and in a measure was justified by a sharp drop in blood count from 3,900,000 red blood cells and 61 per cent hemoglobin on admission to 2,900,000 red blood cells and 59 per cent hemoglobin.

The patient was in severe shock; however, a shock out of all proportion to the existing blood count. Heart was rapid, weak and showed many extrasystoles. He had many crepitant rales over the chest, especially at the bases. The boy was pale, lips cyanosed; he was apathetic; became very dizzy on turning his head and had marked lateral nystagmus; no neck rigidity.

The diagnosis was multiple fat embolism in the myocardium, accounting for the clinical findings. Unfortunately an electrocardiogram was not obtained during the height of the attack, the first being taken about twenty-four hours later. This showed a definite flattening T<sub>2</sub> which became quite positive twenty-four hours

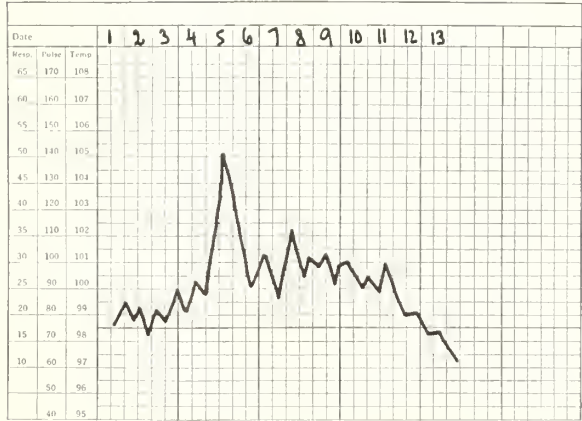


Fig. 1. Fever chart.



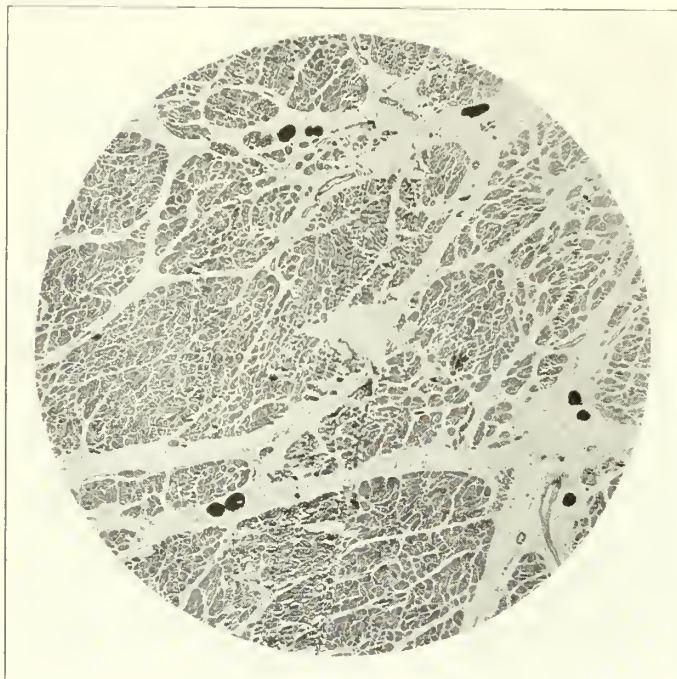


Fig. 2. Section of myocardium showing fat emboli clearly in capillaries of interstitial tissue.

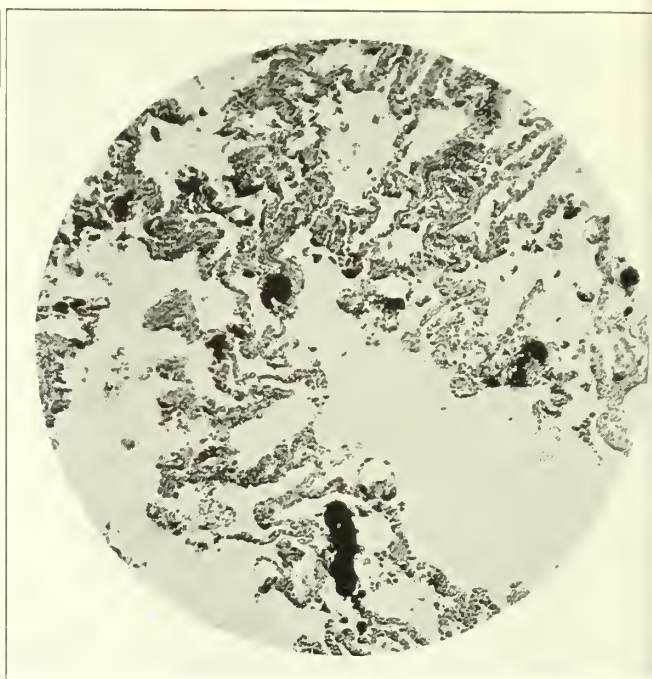


Fig. 4. Section of lung showing multiple fat emboli in capillaries. Note the large blocked capillary on top of section. (Osmic acid preparation.)



Fig. 3. Section of kidney showing fat emboli in capillaries of the glomeruli.



Fig. 5. Section of brain showing multiple fat emboli in small capillaries.



later; rhythm was normal at the time the tracings were taken.

The lung signs and roentgen ray findings could be perfectly explained by multiple pulmonary fat embolism. The rapid disappearance of signs in twenty-four hours likewise was characteristic of fat embolism.

*Roentgen Ray Report of Chest.*—On November 21 further radiographic studies made to include the chest revealed a bilateral acute patchy type of pneumonic change throughout both lung fields, somewhat more intense on the left than on the right. The diaphragms both rather high and expansion of the thorax generally impaired. The pulmonary changes present seem highly acute with some confluent type of consolidation appearing on the left side. No definite pleurisy present. The heart and mediastinal shadows are distorted due to the anterior-posterior exposure with the patient in the recumbent position. The pulmonary changes are entirely consistent with a bronchopneumonic type of involvement of relatively acute character; however, multiple emboli could explain the findings. No demonstrable ulcerative changes appearing as yet.

On November 23, reexamination of the chest after an interval of forty-eight hours revealed definite improvement in the pulmonary condition. The lung fields were ventilating more clearly with evidence of resorption of a great deal of the exudate. A coarse patchy thickening persisted over both lung fields but the manifestations were definitely regressive in type. No definite pleurisy had appeared and the diaphragms were still moderately elevated but not deformed. The heart and mediastinal areas are much exaggerated due to the recumbent position and have not changed since the previous study by Dr. E. R. Deweese.

The abdominal extension could well be explained by mesenteric emboli, although ileus accompanying the general picture could likewise have been expected.

The marked vertigo, which was accompanied by great uneasiness and sluggishness, and nystagmus could be explained by multiple brain emboli.

Blood test about eighteen hours after onset of attack was negative for free fat. Icterus index characteristically was high (40) and rapidly dropped.

The patient after twenty-four hours made a very rapid recovery.

Laboratory studies showed urine essentially negative. On admission the blood count showed hemoglobin of 61 per cent; red blood cells, 3,900,000; white blood cells, 14,300, with normal differential count. Coincident with elevation of temperature red count dropped to 2,900,000, hemoglobin to 58 per cent, and the leukocyte count rose to 23,000 with normal differential count. Within twelve hours the erythrocytes rose to 3,700,000 and the next day reached 4,000,000 cells, the hemoglobin rising to a maximum of 76 per cent. The leukocyte count remained elevated, fluctuating between 21,000 and 12,000 during the febrile period. The icterus index twenty-four hours after the accident rose to 40, dropped the next day to 25, and the following day to 20. An analysis of these findings suggests some rapidly acting hemolyzing agent with an accompanying leukocyte response.

The case is of particular interest because of the heart symptoms. It is not often that one sees myocardial fat embolism during life and complete recovery after the attack.

"Fat Embolism" was discussed quite completely by Dr. Koritschoner and the writer in February, 1936, in *THE JOURNAL* of the Missouri State Medical Association. The reader is referred to this article for the more detailed analysis of this important condition. A few of the microphotographs are reproduced.

It will be recalled that we directed attention to two clinical types; one showing acute embolic phenomena alone, the other, sometimes the more delayed form, showing also a febrile course accompanied by a varying degree of anemia and high icterus index. The latter conditions it was felt were caused by the action of the free circulating fat in the blood.

I repeat the therapeutic considerations mentioned in the previous article: The treatment may be divided into the preventive and the curative. Many measures have been suggested to prevent fat embolism such as ligation of the thoracic duct, a tourniquet above the injured areas and free drainage of the fracture sites. All these measures have proved unsuccessful. All writers agree that the most important measure is careful handling of the patient after injuries and during operations, avoidance of manipulation of injured parts and great care during transportation.

No successful curative treatment has been found. However, it is the opinion of writers that sudden death in these cases is largely the result of vasomotor collapse rather than actual damage of the affected organs. It is agreed that the circulating fat and the fat in embolic areas is absorbed after a relatively short time without permanent damage. Therefore, effort should be directed to tide the patient over the critical period of collapse, which is especially an accompaniment of extensive brain and myocardial embolism. With this idea in mind we employed the Drinker respirator immediately after the onset of severe symptoms of embolic shock. With this measure in three instances the patients who were expected to die were carried over the critical period and recovered.

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I wish to express my gratitude to Dr. H. M. Parker, Kansas City, for permission to present this interesting case.

## VITAMIN A DEFICIENCY AND DARK ADAPTATION

Bertha L. Isaacs, Frederic T. Jung and A. C. Ivy, Chicago (*Journal A. M. A.*, Aug. 27, 1938), present the results of their studies pertaining to the relation of vitamin A to dark adaptation as measured by the biophotometer in 143 medical students. Their original purpose was to determine whether a correlation exists between the dietary intake of vitamin A, biophotometer readings and clinical symptoms. No correlation could be detected between dietary vitamin A and biophotometer readings. Neither could a correlation be noted in the subjects between vitamin A intake and clinical signs and symptoms of vitamin A deficiency. The authors believe that nothing is gained by translating dial readings of the biophotometer into millifoot candles, because errors are introduced and the effects of certain fallacies are exaggerated thereby, and that the criteria generally chosen for the recognition of vitamin A deficiency by means of the biophotometer are not the most reliable criteria. Far more study is essential before the biophotometer or any other single similar instrument can be used for the detection of vitamin A deficiency in the human being.



## TREATMENT OF ACIDOSIS IN RENAL INSUFFICIENCY

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It is a common experience in the practice of medicine to see a new drug or a new principle of treatment for the relief of one condition stimulate its trial in other related diseases or symptom complexes. Indeed it is to the credit of mankind that, while we may not all be originators or discoverers, we do have an amazing ability to adapt the discoveries of others to our own needs. In the present instance, the solution of a pediatric problem; namely, the parenteral injection of sodium r-lactate solution in a dehydrated, acidotic infant, as devised by Hartmann and his coworkers, first led to a series of interesting findings in acidosis of renal origin in children and in adults.

Our interest in the subject dates some four years back to the discovery of acidosis in an elderly gentleman on whom we had done a cautery punch operation. Briefly the story is as follows.

### REPORT OF CASE

A man, aged 65 years, had irritative bladder symptoms which were attributed to several small bladder stones and a small posterior commissural hypertrophy of the prostate. There was no indication of renal insufficiency upon admission other than a blood nonprotein nitrogen report which was in the "high normal" range of values. His physical condition appeared to be excellent.

A short session with a lithotrite relieved him of his stones, the fragments being washed out through the cautery punch sheath prior to resecting the middle lobe. Three days of normal convalescence elapsed. On the evening of the fourth postoperative day some slight mental confusion appeared associated with loss of appetite and hiccoughing. The following morning the blood nonprotein nitrogen was 163.0 milligrams per 100 cc. For three days 1000 cc. of lactate-Ringer's solution and 2000 cc. of 10 per cent dextrose were given intravenously with some improvement although the anorexia, mental confusion and rather marked vomiting persisted to some degree. During the following week, however, improvement did not continue. The patient still was disinclined to eat and, if he did eat, vomiting ensued. Dextrose alone was given daily during this time, from 1500 to 2000 cc. of a 10 per cent solution intravenously.

On the sixteenth postoperative day the patient's condition was critical. His nonprotein nitrogen had stayed above 67.5 milligrams and he was very weak. At this time an inspired intern ordered a serum carbon dioxide and a report of 40 volumes per cent was returned.

It was Dr. Hartmann's suggestion that the patient be given intravenously 200 cc. of molar sodium r-lactate diluted with 1000 cc. (5 volumes) of 10 per cent dextrose and that this be followed subcutaneously by 100 cc. of molar sodium r-lactate diluted with 1500 cc. of Ringer's solution. After the administration of this fluid the serum carbon dioxide content rose to 65.0 volumes per cent and the blood nonprotein nitrogen dropped rapidly to 30 milligrams per 100 cc. Within three hours from its administration the patient was entirely clear mentally,

his appetite returned rapidly and he was in condition to leave the hospital within three days.

The development of uremia is not unexpected in many conditions. It is certainly not confined to a case that has undergone or is about to undergo some urologic manipulation. On the other hand, uremia is a more frequent complication in urologic practice than in other surgical specialties because of the greater frequency of renal disease in that type of patient. We do not wish to infer that acidosis is a constant companion of renal insufficiency in all types of cases. But the records of St. Louis Children's Hospital show sixteen instances of acidosis of renal origin in the last ten years and, although the number of adults similarly affected which we have observed is smaller I am convinced closer investigation would have revealed others. Certainly the frequency with which we are encountering this complication matches our increasing interest in the phenomenon. We have seen and continue to see individuals lapse into a uremic state in spite of what was considered adequate attention to fluid and food intake and to proper mechanical correction of some urologic difficulty, in whom an unsuspected acidosis appears to have been the predominant factor in the failure of that patient to respond to treatment. The response of these desperately sick patients with high nonprotein nitrogens and a low  $\text{CO}_2$  to the intravenous and subcutaneous injection of calculated amounts of sodium r-lactate in most instances has been dramatic, particularly so where the renal insufficiency developed rather acutely.

Some understanding of the mechanism involved in the maintenance of the near neutral reaction of the blood at a constant level will be helpful in any discussion of acidosis and its treatment. While the hydrogen ion concentration of the urine may vary from a strongly acid  $\text{p}_\text{H}$  of 5 up to an alkaline  $\text{p}_\text{H}$  of 8, the  $\text{p}_\text{H}$  of the blood is kept quite close to 7.4 and life cannot be sustained for any length of time if the  $\text{p}_\text{H}$  of the blood ranges very far from that point. There is nothing more striking in the body economy than the maintenance of the hydrogen ion concentration of the blood at a constant level. The lengths to which the body will go to preserve this relationship of interaction between the acids and alkalis constitutes one of the high lights of body metabolism.

The acids of the blood are represented primarily by carbonic and phosphoric acids. They are weak acids and possess the property of maintaining a constant reaction in a solution which may also contain an excess of their salts. The alkali of the blood is represented chiefly by sodium bicarbonate. The buffer action of bicarbonate and phosphate allows a considerable variation of acid and base ions without a disturbance in the faintly alkaline reaction of the blood. There are two sources of the acid and basic substances involved in this process, food and the constant production in metabolism of acids such as carbonic, phosphoric, sulphuric and lactic,

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and of alkalis such as ammonia. The amino acids and proteins may function either as acids or alkalis. There is at all times a considerable reserve of alkalis in the body. Acids are removed from the body in three ways: first, by the exhalation of gaseous carbonic acid via the lungs; second, by the elimination of fixed acids through the kidneys, and third, by the excretion of some phosphoric acid through the intestines. The ratio of carbonic acid to base bicarbonate in the blood is as one to twenty. An increase of acid in the blood will stimulate the respiratory center and increase pulmonary ventilation. This eliminates the excess carbonic acid and permits of the reestablishment of the one to twenty relationship between carbonic acid and base bicarbonate.

The bicarbonate of the blood represents a criterion of the acid base balance. It represents the excess of base after all the fixed acids have been neutralized and serves as available alkali to neutralize any excess of such acids which may appear. The measurement of the carbon dioxide in the blood, or the normal carbon dioxide content of the blood, amounts to about 55 volumes per cent. If this is reduced there must be an excess of fixed acids present or a lowered alkali reserve. One definition of acidosis, therefore, is that it is a condition in which the bicarbonate of the blood is below normal levels. If the ratio of carbonic acid to base bicarbonate becomes greater than one to twenty due to an excess of fixed acids in the blood and pulmonary ventilation does not promptly return this ratio to normal the condition is spoken of as uncompensated acidosis. In this instance the  $p_{\text{H}}$  of the blood approaches 7. If the  $p_{\text{H}}$  of the blood is held constant at 7.4, even though the bicarbonate of the blood is reduced, the condition is one of compensated acidosis.

Reduction of the bicarbonate of the blood may occur either through the appearance of substances like beta-oxybutyric acid when the carbohydrate metabolism is disturbed, as in diabetes or starvation, or the bicarbonate may be reduced because of the accumulation of acids in the blood stream which have not been adequately eliminated by a pair of diseased kidneys.

While this is by no means the entire story, it may serve perhaps as a partial explanation of the function of sodium bicarbonate in the prevention of acidosis.

We have already said that the normal hydrogen ion concentration of the blood is dependent upon the maintenance of a one to twenty ratio between the acid and base content. If additional acid is added to the blood or the base content is reduced this relationship is disturbed and the hydrogen ion concentration falls from a  $p_{\text{H}}$  of 7.4 toward a  $p_{\text{H}}$  of 7. The resourcefulness with which the body will meet such a situation is made manifest in several ways. In an individual with a normal pair of kidneys it has been demonstrated that an alkaline urine with a  $p_{\text{H}}$  of 8 contains 15 grams of sodium

bicarbonate per liter. If that same individual's urine has a  $p_{\text{H}}$  of 7, however, there will be just one tenth as much sodium bicarbonate per liter, or 1.5 grams. As the  $p_{\text{H}}$  of the urine descends to 6 the bicarbonate content per liter drops to 0.15 grams. In the strongly acid urine with a  $p_{\text{H}}$  of only 5 there will be found just 0.015 grams of sodium bicarbonate per liter. In this striking way the body preserves base substance. It is done by means of a reabsorption of excreted sodium bicarbonate in the kidney tubules.

Another saving of potential alkali comes through the reaction of the two buffer substances in the blood stream, dibasic sodium phosphate and monobasic sodium phosphate. Under normal circumstances the ratio of dibasic sodium phosphate to monobasic sodium phosphate is as 4 to 1. Should acidosis intervene to the extent that the urine becomes acid with a  $p_{\text{H}}$  of 6, this ratio may change from that of four to one to a ratio of one to nine. As further evidence of the remarkable body economy in these respects is the fact that in the presence of a very strongly acid urine some of the body acids, including beta-oxybutyric acid, can exist in as much as a 20 per cent unneutralized form. The conversion of a waste product urea into a basic substance ammonia capable of neutralizing free acids is yet another safety mechanism in the body's ability to preserve a neutral reaction. It is significant in this respect, however, that as the kidneys become damaged they lose their ability to convert urea into ammonia.

It is well known that individuals suffering from a chronic glomerular nephritis in which a considerable amount of kidney substance has been lost may, during periods of stress from an infection or improper eating or inadequate water consumption or bouts of vomiting, suddenly develop acidosis. The same is true of people with anatomical abnormalities of the kidneys. The same may be said for men with large prostates and a gradual loss of kidney substance. The whole thing is a part of the uremic picture. The malaise, anorexia, vomiting and semistupor of preuremic or uremic states is, as a rule, easy to identify; but in our experience the clinical signs of acidosis, of which rapid breathing is the most important, are just as easily overlooked. Since we realized that in some of these cases there was an associated acidosis and noted the rapidity of improvement after the parenteral injection of sodium r-lactate solution, all forms of renal insufficiency in which there was an indifferent or no response to ordinary fluid administration and diuresis have taken on additional interest.

Much credit is due Hartmann and his associates for their insistence that regardless of the cause, loss of water is almost certain to be associated with loss of certain chemicals or electrolytes, notably chlorides, sodium, potassium and bicarbonates. The great reservoir of electrolytes in the intercellular fluid is adequate to carry a sick individual through ordinary strains but even this reservoir may be



depleted in certain emergencies. When the kidneys through injury or disease are unable to excrete fixed acid and reabsorb bicarbonate, the parenteral administration of solutions furnishing sodium, calcium, potassium and bicarbonate without having to rely too much on kidney activity may be a life saving device.

Let us return for a moment to what has been an accepted form of treatment of a uremic patient. Such a patient is in coma or perhaps in semistupor depending on the degree of uremia. He takes fluids and foods by mouth poorly, if at all. His urinary output drops considerably although he is not necessarily anuric. In most instances he receives saline solution under the skin or glucose solution intravenously and oftentimes both. In this way his fluid requirements are met, after a fashion at least, and he gets some food. Furthermore, there is the feeling that, because of the diuretic effect of the glucose solution, kidney activity will be whipped up with a consequent drop in the accumulation of blood serum waste products associated with the uremia. The indiscriminate use of saline solution subcutaneously is not without its risk, however, in that it is perfectly possible to overload the system with chlorides in the presence of a dehydration without chloride deficiency. So far as the glucose solution is concerned it provides fluid, available glycogen and some diuresis. It does not, however, supply any of the lost electrolytes.

We have seen urologic postoperative patients develop uremia and an associated acidosis in the face of adequate saline and glucose administration. The substitution of Ringer's solution for the ordinary saline solution will overcome this obstacle in perhaps most of the cases for in Ringer's solution we have a fluid which is similar in its clinical proportions to the blood plasma or the intercellular fluid. Ringer's solution alone, however, is not so helpful in the presence of a lowered alkaline reserve or acidosis because the amount of bicarbonate present in this solution is much less than in normal blood plasma or intercellular fluid. More sodium bicarbonate cannot be added to Ringer's solution because of the precipitation of calcium bicarbonate.

Sodium bicarbonate can be given parenterally to an individual with severe acidosis but it has been found that if given in effective amounts it usually produces too rapid an effect, often shifting the patient from an uncompensated acidosis to an uncompensated alkalosis. Furthermore, the sterilization of such a solution for intravenous or other administration offers technical difficulties. On the other hand, the sodium salt of lactic acid makes use of an acid which is a product of normal metabolism in the body and a solution can be made which is nonirritating and readily sterilizable by boiling.

Sodium r-lactate should not be confused with the ordinary commercial sodium lactate. The r-lactate or racemic form contains both dextrorotatory and levorotatory forms of the salt. A solution suitable for oral administration known as sodium lactate

liquid is now available. Ampules containing sodium r-lactate for intravenous and subcutaneous use have been on the market for some time. The mechanics of its action are simple. The levorotatory portion of the molecule undergoes metabolism into liver glycogen in almost quantitative amount. The dextro portion of the lactate undergoes oxidation for the most part although some escapes into the urine. The sodium ions of this portion are freed to combine with the excess  $\text{HCO}_3$  of carbonic acid so that sodium bicarbonate is produced.

#### METHOD OF PREPARATION AND SOURCE OF SODIUM LACTATE

I quote from an article by Hartmann regarding the preparation of sodium lactate:

*Sodium Lactate.*—This solution, also, can be made most conveniently in a concentrated form: i. e., as a molar solution which may later be diluted as desired. Molar sodium lactate may be prepared by neutralizing 100 cc. of lactic acid (U. S. P.) with concentrated carbonate-free sodium hydroxide (approximately 40 per cent), phenol red being used as an indicator. The solution is made up to about 800 cc. with distilled water and heated to the boiling point for from thirty to forty minutes, small amounts of alkali being added meanwhile as needed to neutralize the lactic acid formed through hydrolysis of the anhydride. The solution is then made up to 1000 cc. with freshly distilled water, filtered through a glass disk, sterilized in an autoclave at from 15 to 20 pounds pressure for thirty minutes, and preserved in stoppered flasks or in sealed ampules.\*

*Lactate-Ringer's Solution.*—If both the hypotonic Ringer's solution and the molar sodium lactate solution are available, lactate-Ringer's solution may be freshly prepared before using by simply adding 10 cc. of the molar sodium lactate solution to from 500 to 450 cc. of the Ringer's solution. If desired, the lactate-Ringer's solution may also be made in a concentrated form.\*\*

It has been found that if the twenty to one ratio between bicarbonate and carbonic acid is reduced to let us say sixteen to one, producing an uncompensated acidosis, it is possible to return this ratio to its normal twenty to one state within from two to four hours by the administration of a single balancing injection of sodium r-lactate solution. If laboratory facilities are available and the  $\text{CO}_2$  determinations of the blood known, a simple formula will determine the amount of sodium r-lactate needed.

$60 - \text{CO}_2 \text{ determination} \times (0.3 \times \text{body weight in kilograms}) = \text{dosage in cc. of molar sodium r-lactate.}$

With clinical evidences of uremia and acidosis, without the aid of a laboratory, an empiric formula by body weight in kilograms can be used which will raise the  $\text{CO}_2$  33 volumes per cent.

10 cc. of molar sodium r-lactate, or 60 cc. of 1/6 molar sodium r-lactate per kilo. of body weight.

The fortunate thing about it is that should an excess of alkali be given, the unneeded sodium sim-

\*Such a molar solution may be obtained already prepared in 40 cc. ampules from Eli Lilly & Company, Indianapolis.

\*\*Such a concentrated solution may be obtained in ampule form from Eli Lilly & Co., Indianapolis, under the name of physiological buffer salts solution.

ply leaves in combination with chloride in the urine and the excess  $\text{CO}_2$  is blown off by the lungs. There is little if any danger of an uncompensated alkalosis such as has been met with when sodium bicarbonate solution was used, particularly if the sodium r-lactate solution is combined with Ringer's solution, according to the following formula:

60 cc. of 1/6 molar sodium r-lactate solution  
40 cc. of Ringer's solution

100 cc. of fortified lactate-Ringer's solution per  
kilo. of body weight.

The following represents the course of an acute uremic case with moderate acidosis.

#### REPORT OF CASE

A man, aged 68 years, was sent home from the hospital following a suprapubic cystostomy because of a constant elevation of blood nonprotein nitrogen in spite of dextrose and lactate-Ringer's parenteral fluid administration together with dietary restrictions. The dieticians tried for nine months to reduce the blood nitrogen values without success. Enucleation was finally done and his convalescence was singularly uneventful for nine days. On the ninth day within a period of a few hours his pulse became rapid and weak, there was marked prostration and he lapsed into coma. His blood nonprotein nitrogen rose abruptly from 60 milligrams to 203 milligrams and his blood carbon dioxide was 41.5 volumes per cent. The blood chlorides were 568 mgm., proteins 7.02 gm. and inorganic phosphates 10.5 mgm.

He was given 500 cc. of 10 per cent dextrose with 20 cc. of lactate-Ringer's solution and 500 cc. of sixth molar sodium r-lactate intravenously. In addition, he received at the same time 2500 cc. of sixth molar sodium r-lactate subcutaneously.

The following day he was rational and his general condition apparently normal. We continued daily intravenous injections of 10 per cent dextrose and lactate-Ringer's solution for several days. Four days after this crisis his nonprotein nitrogen was 116 mgm.,  $\text{CO}_2$  55.5 volumes per cent, chlorides 608 mgm., phosphorus 5.5 mgm., and total proteins 6.74 gm. Four days later his  $\text{CO}_2$  was 54.4 volumes per cent, chlorides 624 mgm., nonprotein nitrogen 70 mgm., proteins 6.56 gm., phosphorus 3.1 mgm.

Clinical course was quite uneventful beginning the day following the use of the sodium r-lactate. His wound was healed and he was voiding naturally at the time these last blood studies were made. Subsequently his blood nonprotein nitrogen values returned to normal without any particular dietary restrictions other than some limitation of his proteins.

In milder cases of acidosis sodium r-lactate may be given orally with gratifying results. This is particularly true of the chronic acidosis. It has the decided advantage of being better tolerated than sodium bicarbonate in the gastro-intestinal tract. Furthermore, since the work of Arnold, in which *B. prodigiosus* introduced into the stomach could be found in the thoracic duct if the stomach and duodenum were kept in an alkaline state with sodium bicarbonate, there would seem to be some rationale to the urologist in using an organic acid such as sodium r-lactate. In this case, the acidity of the stomach and duodenum is not disturbed, yet an alkaline urine is obtained.

The "chronic uremia" associated with a severe

nephritis is almost always attended by an acidosis. Such acidosis may be quite severe and yet difficult to recognize. The renal insufficiency permits varying degrees of abnormal retention of acids and excessive loss of fixed base. Severely damaged kidneys fail to make a substitute ammonia for fixed base and to secrete strongly acid urine. An alkaline ash diet may be all that is necessary in the milder instances of acidosis but the severe forms may and do frequently need parenteral injection of lactate-Ringer's solution. Intermediate forms of chronic uremia and acidosis often may be cared for for long periods by the oral administration of 1 to 2 cc. of sodium r-lactate solution per kilo. of body weight per day.

#### REPORT OF CASE

A case history in point is that of a woman in the thirties who was first seen in July, 1935, in the Outpatient Department with a history of pain in the right flank for five years associated with frequency and burning of urination. A previous appendectomy had been of no benefit.

Cystoscopic examination revealed an autonephrectomy on the right side and a severe pyelonephritis on the left side, probably dating back to a pyelitis of pregnancy. Her nonprotein nitrogen at that time was 72 although she had a fair phenolsulphonphthalein return. She was treated in the Outpatient Department by diet and ordinary urologic care for twenty-six months but the nonprotein nitrogen remained at about the same figure all the time. During this interval she continued to do all her ordinary housework.

In September, 1937, when she reentered the hospital, her nonprotein nitrogen had climbed to 128, the urea clearance test was 7 per cent of normal and while there were no obvious clinical signs of acidosis a  $\text{CO}_2$  determination of 38 per cent was obtained. She was given 1500 cc. of 1/6 molar sodium r-lactate solution and the following day her  $\text{CO}_2$  was 71. A few days later her nonprotein nitrogen had dropped back down to 77.

For a period of two months her acidosis was kept under control by the oral administration of sodium r-lactate solution in doses ranging from 1 to 2 cc. of a molar solution per kilo. of body weight each day. From that time on, however, the occurrence of first a pneumonia and then a pericarditis with effusion complicated the situation. Her nitrogen values mounted steadily and, although the acidosis could be fairly well controlled by the parenteral administration of glucose and lactate-Ringer's solution, her course was steadily downward and she died March 1, 1938.

The autopsy revealed a completely destroyed hydro-nephrotic right kidney and a tiny atrophic left kidney about two inches long.

Another instance of a severe chronic glomerulonephritis with a definite tendency to lapse into uremia and acidosis is that of D. A., a boy now aged 7, first admitted to the St. Louis Children's Hospital at the age of 3 with nephritis, hypertension, an enlarged liver and generalized edema. He spent three years in the hospital, receiving numerous transfusions and surviving various bouts with otitis media and the usual childhood diseases. Four months after his discharge in March, 1937, he was returned to the hospital in acute acidosis; this was relieved by the parenteral administration of sodium r-lactate. His  $\text{CO}_2$  rose from 11.2 volumes per cent to 46.4 volumes per cent in twenty-four hours and he remained in the hospital only a few days.

He was again admitted to the hospital in September, 1937, because of a secondarily infected dermatophytosis



with an elevation of nonprotein nitrogen and a lowered  $\text{CO}_2$ . Sodium r-lactate by mouth (20 cc. of molar sodium q. i. d.) sufficed to correct the acidosis at that time. Since this he has remained in reasonably good health outside the hospital despite an apparent terminal stage of an active glomerulonephritis, with his tendency to lapse into acidosis being constantly thwarted by the daily oral administration of sodium r-lactate.

#### CONCLUSIONS

1. Varying degrees of acidosis are present in a considerable number of patients who have either temporary or permanent impairment of renal function.

2. Moderate degrees of such acidosis may be circumvented by the oral administration of sodium r-lactate as an aid to the treatment of a renal insufficiency.

3. More severe degrees of such acidosis may be successfully combated by the intravenous and subcutaneous administration of a sixth molar sodium r-lactate solution, or the use of a combined "fortified" lactate-Ringer's solution.

4. A single balancing injection of the above is frequently all that is needed to permit a patient's uremia being brought under control.

5. The oral or parenteral use of such a solution is an incidental but rational procedure where prompt alkalization of the urine is desired in treating a urinary tract infection.

6. Parenteral injection of sodium r-lactate or lactate-Ringer's solution, even without desirable laboratory information, can be safely and effectively used to combat an acidosis and treat a renal insufficiency if a simple formula is adhered to.

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#### AN EXPERIMENTAL STUDY OF THE BEHAVIOR OF SULFANILAMIDE

Fred L. Adair, H. Close Hesseltine and Lucile R. Hac, Chicago (Journal A. M. A., Aug. 27, 1938), determined the elimination of sulfanilamide in certain body fluids (cervical secretion, menstrual fluid and human milk) and its transmission to and its effect on the unborn fetus. Sulfanilamide has been found in the cervical secretion and menstrual fluid, but in amounts so small that its bactericidal action on the gonococcus is questionable. The criterion of cure of gonorrhea should be based, if possible, on cultural studies as well as on smears. Sulfanilamide is excreted in breast milk, both free and as the acetyl derivative. The milk level is considerably above the blood level, and the drug is excreted in the milk for some time after the blood level is negligibly low. With doses of 2 and 4 Gm. (30 and 60 grains) the total amount excreted was never greater than 1.5 per cent of the amount of the drug administered. It was still being excreted in small amounts seventy-two hours after medication had been discontinued. Sulfanilamide is transmitted to the placenta and fetus of the rabbit and is associated with a marked increase in the mortality of the young. It has also been found in the placenta and cord blood of the human being. Until more is known of the tolerance of the human fetus and of the newborn for sulfanilamide, the drug should be administered only with the utmost caution during pregnancy and the period of lactation. If administered to the mother, breast feeding should be discontinued during the period that sulfanilamide is excreted in the milk.

## UNDULANT FEVER

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To be at all dogmatic regarding undulant fever at the present time is to invite criticism. I know of no disease which the medical profession is called upon to treat, in which there is at present a greater element of uncertainty both in diagnosis and treatment.

From present indications we are about to discover the cause of many of the minor discomforts of a large part of our population or we are off on the wrong track and due for disappointment.

It has been said that the best way to know a disease is to live with it. For this reason since I myself have had undulant fever for twenty-one years, I have presumed to go into the chronic side of this malady in some detail based largely upon my own observations.

Undulant fever in this country is acquired by contact with cattle and swine infected with contagious abortion, through raw milk and other dairy products from infected cows, or by handling infected meat. True Malta fever, seen so frequently in Mediterranean countries, while closely related to our undulant fever, is acquired through infected goats and is rarely seen here.

Contagious abortion is so prevalent in every state in the Union that opportunities for infection in the human are almost unlimited. The cattle and swine herds of our own state are badly infected and have been for many years. Thus, farmers, dairymen, veterinarians, packing house workers and meat handlers are continuously in danger of picking up virulent bacilli. Such bacilli can enter the body through abrasions in the skin or through the digestive tract and infection quickly occur. Laboratory workers, in spite of precautions taken to prevent infection, are frequent victims of this disease. Most cases, however, occur through drinking unpasteurized milk but now that this danger is so well recognized the incidence will undoubtedly be greatly reduced.

Unfortunately for the human race, no tissue nor organ in the body is immune to attack and for this reason many strange manifestations of disease are encountered. In the typical case physical findings are all too frequently lacking and signs and symptoms seem out of proportion to demonstrable pathology. On the other hand, where careful laboratory work is done the bacilli can frequently be demonstrated in unsuspected quarters. The bacillus has been found in the spinal fluids of several reported cases of meningitis. Several cases of encephalitis have been reported in patients suffering from undulant fever; notably four cases reported last year by McCullagh and Clodfelter.<sup>1</sup>

Ocular complications are not rare. Gilbert and Coleman<sup>2</sup> in 1934 reported a case in which the pa-

<sup>1</sup>Read at the 81st Annual Session of the Missouri State Medical Association, Jefferson City, May 2-4, 1938.

tient lost an eye from neuroretinitis caused by this infection. In a personal communication from Dr. S. C. Fulmer, of Little Rock, Arkansas, he described a case of similar nature in a patient with acute undulant fever. One of our own cases developed a chorioretinitis which proved to be quite baffling until the diagnosis of undulant fever was made. The bacillus has been found in pelvic inflammatory disease in women and proved to be the cause of abortion. It has been isolated from acute orchitis in the male. Bone sequestra in chronic osteomyelitis have been cultured and the bacillus found. Arthritic joints have frequently been seen in patients with this disease. These are but samples of the multiplicity of forms which infection with this bacillus may take and when we consider the fact that blood cultures are often positive in early stages of the disease they are not surprising.

So much has been written in the last few months regarding acute undulant fever that I mention it only briefly. The disease manifests itself as a rule about two weeks after exposure and is ushered in by headache, malaise, loss of appetite, severe aching of muscles and joints and a septic type of fever which may go to 104 F. in the afternoon. Drenching night sweats are usually seen and the morning temperatures may be normal or below. Formerly such cases were treated symptomatically or given quinine on the assumption that they must be malaria. The average case treated or untreated hangs on with remissions and exacerbations for about three months and then subsides although many may run low grade fever for many more months.

Undoubtedly many such cases subside and are never heard from again but far too many simply enter the chronic stage about which little has been written. It is these chronic cases with which I am chiefly concerned at this time. Just where the infection is harbored is hard to say but that it is harbored year in and year out is certain. Undulant fever rarely kills, but the amount of disability which it entails is enormous.

Every practicing physician has in his files records of many patients who are known as chronic complainers. They are rarely acutely ill but never feel well. All manner of symptoms are described. They are always tired, they have backaches and sore spots. Many complain of stiff and painful joints, have frequent sacro-iliac strains and pain in the sciatics. They are never hungry and when they do eat complain of abdominal discomfort, constipation and all the symptoms of an irritable colon. Many have chronic sinus infections or various forms of eye trouble and headaches. They are discouraged, depressed and have about given up hope of ever feeling well. Many such patients are drifters and have gone from doctor to doctor in the hope that someone would find what is wrong and give them relief.

Careful and painstaking examination of such patients usually reveals little and only makes the problem harder. Physical examination reveals only

minor disease. Blood chemistry, urinalysis, blood counts, electrocardiograms and all the usual procedures of office diagnosis fail to help. Symptomatic treatment helps for a time and then the patient tries someone else who repeats the process with like results.

The writer of the section on undulant fever in one of our best known textbooks on internal medicine states that the usual sequel to undulant fever is neurasthenia. This is not surprising when we consider that the disease has a great affinity for nervous tissue with joint and muscle involvement coming next. Most of these chronic patients have been classified as neurotics. Failure to find pathological changes commensurate with the symptoms described make this diagnosis seem reasonable and we are apt to overlook the fact that to call a patient "neurotic" is usually to admit that we cannot diagnose his disease.

Having carried this infection myself all these years I am only too willing to admit that these people do suffer and their complaints are worthy of careful consideration. It is true that they are not acutely ill and yet they are far from well. As best I can describe how one feels with chronic undulant fever I should say the patient feels toxic. He is plagued with vague aches and pains especially of the muscles, large nerve trunks and joints. Low backache and pain down the sciatics are frequent. A feeling of weakness and a tendency to tremble are often encountered. The appetite may be diminished and digestion not good. While I have not seen it described by others, I have noticed that most of our cases run a low basal metabolism possibly from toxic damage to the thyroid.

If the physician will round up his chronic complainers and neurotics, especially those complaining of neuralgia and arthralgia, and apply modern methods of diagnosis he will be shocked to find how many really have the disease. Finding so many naturally shakes his belief in the accuracy of diagnosis. However, if he will be honest with himself, he is forced to admit that his treatment to date on most of such patients has been far from satisfactory either to his patient or to himself. Then too the fact must be faced that most of the chronic cases if treated faithfully and well are helped greatly regardless of how long symptoms have been present.

Like most things new in medicine, and recognizing these chronic cases is new, it is easy to become over enthusiastic. However, about the time one decides he is too enthusiastic word comes to him, as it usually does, that someone else has diagnosed chronic undulant fever on one of his patients and made a new man of him by proper treatment. When this happens we wonder if we are enthusiastic enough.

This brings us to a consideration of what is meant by modern methods of diagnosis. In the past we undoubtedly missed a large percentage of our diagnoses by depending entirely on agglutination reac-



tions. It is true that many acute cases will show strong agglutination properties beginning about the twelfth day of the disease. Far too many of the acute ones, however, and most of the chronic ones do not agglutinate. For this reason a negative agglutination test does not rule out the disease.

It has been known for many years that injection of small amounts of the bacilli or their filtrates into the skin of an infected person or laboratory animal will produce a local reaction. This reaction consists of an area of redness surrounding a smaller area of edema. The reaction may begin in a few hours and usually begins to fade in forty-eight hours although occasionally no reaction occurs until the third or fourth day. This test is one of our most reliable means of diagnosis at the present time. Sometimes the local reaction is quite severe and may produce a localized area of necrosis. A sharp increase in all usual symptoms may result due to a general reaction although this is not constant. The skin test does not necessarily mean that the patient is actively infected. It may simply be an immune reaction, but if the test is positive it means one of two things; either, that the person now has or has had at some time infection with the disease.

It is impossible even to venture a guess as to how many of our population would give a positive reaction if tested. When we consider how prevalent the disease is in lower animals and how much raw milk has been consumed in the past and is being consumed now, it is a wonder any one escapes. Such figures might even approach the high total seen in adults tested intradermally with tuberculin. In our own cases, we have tested only those in whom the history led us to suspect infection might be present and to date about 75 per cent have reacted.

In 1931, Huddleson and Johnson<sup>3</sup> reported that the polymorphonuclear leukocytes of those persons having had a known exposure to the germs of the disease, developed the ability quickly to phagocytize the bacteria when placed in contact. Persons without such exposure had leukocytes in which this ability was totally lacking or present only to a slight degree.

Recent investigators, notably Foshay,<sup>4</sup> have made use of this opsonophagocytic test in diagnosing cases and in judging the amount of resistance in patients or in tracing the response of the patient to therapy. The test, of course, requires the cooperation of a well staffed and equipped laboratory. While the test has been disappointing in many respects it does in many cases follow clinical progress. Frequently as the patient improves more and more leukocytes engulf more and more bacteria. Foshay has worked out a formula now used by many laboratories which, for purposes of comparison, gives an index number the rise of which means progress on the part of the patient in overcoming his infection. For some reason women during the menstrual period frequently show a very low index and for this reason it is useless to make a determination at that time. Greatly debilitated patients also

often fail to give a response. Before dismissing a suspected case as negative, it is necessary to get a negative response to all three tests. It frequently happens that one of the three will be positive and the other two negative. Thus unless all three are tried many diagnoses will be missed.

Knowing that these tests may be simply immune reactions and since we have no way except direct culture to prove the presence of active infection, how are we to know whom to treat? Obviously there is no point in treating a patient simply because he gave a positive skin test which may have meant he had the disease ten years ago. I think the best criterion is how the patient feels. If he shows symptoms which to him are distressing or annoying, he is certainly entitled to treatment whether the symptoms have been present six months or twenty years.

Last week we started a man on treatment who stated that he could not remember when he did not ache. He had been all over the country seeking relief and had been subjected to almost unbelievable therapeutic measures without the least benefit. This man had a weakly positive skin test, negative agglutination and a weakly positive opsonic index. It is possible that this man has been infected since childhood. As I have already stated my own infection dates back twenty-one years and I have shown symptoms continuously all that time. What is most convincing to me is the fact that since starting treatment last August 1 have shown steady and marked improvement.

When we come to the problem of treatment we find a wide range of products being used. This proves that we have no specific treatment worthy of universal use. In the past there was no treatment available and symptomatic relief while waiting for the disease to run a self-limited course was about all we could hope for.

Drug therapy of all sorts has been advocated but no drug survived the test of time. Next came a variety of specific sera and heavy bacterin suspension of mixed strains of the *Brucella* organism. These not only failed to produce results but in many instances actually made the patient worse.

Fever therapy has its advocates. This is produced by intravenous typhoid bacilli or the artificial fever machine. We have never used typhoid but have treated two cases, one acute and the other of rather long standing, by the fever machine. Both cases made a nice recovery and tolerated the treatment well. As far as we know the acute case has remained well, although we have had no recent report from him. The other case, however relapsed within six months and was worse off than before.

We have been using routinely Foshay's serum and vaccine and from our experience so far see reason to be encouraged as to its value. The treatment is not perfect and not all cases respond but it is so far superior to anything else we have used that we see no reason to change.

The serum is used only on acute cases. Foshay

himself limits its use to those cases which have run for eleven months or less. The earlier it is used the more favorable the result. The serum is given intravenously, the usual acute case requiring 30 cc. for three successive doses. Improvement is prompt and often dramatic. If used on chronic cases, however, relapses quickly occur and the result is very disappointing. The usual precautions necessary for using a foreign protein intravenously should be observed carefully for sharp reactions can occur. Recently we have been successfully preventing these by the use of histaminase, a product of Winthrop which is not yet on the market but does seem to have promise of great usefulness in allergic conditions.

The use of the vaccine in chronic cases is calculated to test the patience of both doctor and patient. Minute doses must be given daily or every other day over long periods of time to be effective. The process is almost like that of a diabetic with his insulin as far as need for persistence is concerned. The vaccine comes in various strengths denoted by the letter T with its suitable number. The T refers to turbidity and is fixed by comparison with known fixed standards. The usual strength is T50 and most cases tolerate this nicely. In general, those patients exhibiting a violent skin reaction tolerate only very dilute doses and it may be necessary to use a T10 or T12 to prevent reactions. If wrongly used the vaccine not only fails to help the patient but is actually harmful and causes relapses which are very discouraging. The best criterion we have in judging whether the dose is too great is the local reaction. If areas of redness coupled with firm indurated lumps occur at the site of injection the patient is receiving too much vaccine. It is either necessary to reduce the amount or to use a vaccine with a smaller T number.

In the ideal case, the phagocytic response rises as symptoms abate. Thus a patient with a Foshay index of 80 is more apt to feel well than one with an index of only 20. Sometimes, however, the reverse is true and that makes it impossible to place complete reliance on this test. Usually if the patient relapses from too much vaccine the index falls. I know of one case in which following an increase in dosage the index fell from 93 to 50. At the same time hard lumps appeared in the arm and the patient was made definitely worse for a period of four weeks.

Unfortunately neither the serum nor the vaccine is at present on the market. When it is made available it is essential to recognize the dangers of careless use or the whole treatment will be discredited. There is a natural tendency to hurry things by increasing the dose frequently but this is not the way it works.

How long a chronic patient must be treated is a question. It is always a question of many months and from present indications may be two or three years. The only way of knowing is to stop the injections for a time and see if symptoms return.

Many patients object to or refuse treatment because of the expense. We have overcome this objection by giving a flat rate for monthly care or, in more intelligent patients, allowing them to give themselves the injections at home. If this is done, it becomes necessary to have the patient report frequently for observation. If any increase in dosage is made it must be made under the personal supervision of the doctor who watches the results of the first few injections to be sure no local reactions occur.

No improvement is to be expected for a month or six weeks. In fact the first few doses may cause an increase in symptoms, even in the absence of local reactions. These matters should be explained to the patient before he begins treatment. Otherwise the average man or woman will refuse to go on. On the other hand, improvement begins almost at once in certain individuals.

Many articles have recently appeared in which claims are made for excellent results with this or that product. The usual claim is that cure has resulted because fever has subsided and the agglutination reaction has become negative. To my mind these criteria are misleading. Practically all cases, even if not treated at all, will sooner or later cease to run fever and very few of the chronic cases give an agglutination reaction. The patient may go on for years feeling badly and aching in various joints and muscles without running temperature and without showing agglutination reactions. To call such a patient "cured" is far from true. The term "undulant fever" is for this reason misleading to the layman. He expects to run fever if he has a fever diagnosed. For this reason possibly Brucellosis is a better term.

I should like to present a few typical case reports which are of interest in showing how difficult it sometimes is to recognize and treat this disease.

#### REPORT OF CASES

Case 1. A man aged 44 years gave a history of an undiagnosed illness in 1917 characterized by chills, fever, night sweats, arthritic joints, weakness and general malaise. Acute symptoms gradually subsided and after six months were stopped entirely following an attack of influenza and pneumonia in 1918. During most of this six months' period the patient continued to work. Following the acute illness he continued to have much pain in the joints and nerve trunks. His appetite was poor and abdominal pains were frequent. Several suspicious looking teeth were removed without relief. In 1925 tonsils and adenoids were removed still without relief. In 1928 an appendectomy was done for the relief of frequent right lower quadrant pain. This also failed to help. During this time the patient was free from fever and for short intervals seemed well. Cycles of pain alternated with a feeling of well being. Frequent acute sinusitis was present. Several attacks of phlyctenular conjunctivitis were experienced and usually followed on the sinus condition. A peculiar type of stomatitis frequently appeared which the dentist thought to be due to systemic infection but repeated examinations and much laboratory work failed to find this infection. A lowered basal metabolic rate was observed and some symptomatic relief of the listless, tired feeling was obtained by use of thyroid. In 1935 the patient nearly lost



the sight of his right eye from a corneal ulcer which was also thought to be due to some type of hidden infection. In July, 1937, the patient was used as a control for a skin test of undulant fever. The suspected patient had no reaction but the control reacted violently and developed a slough in the skin at the point of injection. Opsonic index determinations were then made and this being positive the diagnosis of undulant fever was made. Agglutinations were negative as usual.

The following month Foshay's vaccine was started and injections made every other day. Severe local reactions developed and the patient felt much worse generally. The vaccine was then diluted eight times with saline and he has continued on this dilute vaccine to date. All symptoms have been alleviated and the patient feels better than he has for years. The original infection was traced to laboratory exposure.

Case 2. Mrs. K. W., aged 70 years, was admitted to St. Luke's Hospital February 2, 1937, complaining of acute sinusitis and a tender swollen area on her forehead which her family doctor had diagnosed as an inflamed nerve ending. She also had been running an afternoon temperature ranging from 99 F. to 101 F. Her headaches and the sinus pains were always worse at night. Recently frequent attacks of indigestion appeared.

Her past health had been good in general although she gave a history of frequent miscarriages during her early married life. These usually occurred during the fourth to sixth week of gestation. She bore three normal children.

Physical examination revealed little; an ear, nose and throat consultant even failed to confirm the diagnosis of sinusitis. During her course in the hospital she developed more indigestion and a severe anorexia.

Disturbed vision in the left eye called for an ophthalmologic consultation the consultant finding a marked optic neuritis. This he attributed to infection and asked for a reexamination by the otolaryngologist who again failed to find infection. A suspected tooth was removed without relief. A neurologist was then called in. He agreed with the diagnosis of optic neuritis and asked for drainage of the sphenoid and ethmoids which drainage the otolaryngologist refused to do. Stereoscopic plates of the skull were negative as also were repeated chest plates. Blood chemistry was normal. The urine was negative except for a trace of albumin. The red count and hemoglobin showed a secondary anemia. The white count and differential were normal. Wassermann and Kline were negative. Agglutination tests for typhoid, paratyphoid and undulant fever were negative. She was discharged on March 7, 1937, more than a month from the date of admission. She still had a temperature, still undiagnosed and unimproved except for some lessening of her symptoms as a result of bed rest.

On April 29, 1937, she was readmitted, still having a temperature and complaining now of night sweats, headaches and aching of various joints and over the sciatic distribution in both legs. Physical examination was negative again except that the optic neuritis had about cleared up. The laboratory tests were again essentially normal. Blood cultures were negative and routine agglutinations negative.

At this time a skin test for undulant fever was made and a markedly positive reaction occurred. She was started on Foshay's vaccine and sent home where she has made a slow but gradual recovery. She is now fever and symptom free. Her opsonic index has risen from an original 61 to 87. She is still under treatment in spite of an absence of symptoms.

Case 3. Mrs. L. T., white woman, aged 35 years. She entered St. Luke's Hospital on January 16, 1934, complaining of daily afternoon temperature to 100 F. for the last six months. Also present were physical weakness, moderate weight loss, dyspnea on exertion and marked anorexia. Recently diarrhea had become quite

troublesome. Her past health had been excellent. The present complaints came on one week after returning from a vacation trip to the Ozarks.

Physical examination was negative. The laboratory studies showed a slight anemia and a low white count with an increase in lymphocytes. Stools were negative for ameba. The urine was negative including culture. Blood cultures were negative. The gallbladder and gastro-intestinal roentgen rays were negative except for an irritable colon. Proctoscopic examination was negative except for slightly reddened rectal mucosa. The gastric analysis showed a moderate subacidity. She was discharged on January 19 undiagnosed and with a slight improvement on symptomatic treatment.

She was not seen again until October 1, 1937, over three years from her hospitalization. The low grade fever had persisted at times. She complained now of periods of severe pain in various joints and muscles of the legs. She was tired and listless and very depressed and discouraged. Physical examination and laboratory tests were again negative except for gastric subacidity and a lowered basal. A skin test for undulant fever was positive and her opsonic index was 56. She was started on Foshay's vaccine T 50 and given 1/20 cc. every other day. Several times efforts were made to increase the dosage with bad results. Local reactions took place followed by increased symptoms lasting for several days. On one such occasion the opsonic index fell to 10. On smaller doses of vaccine she has shown steady improvement. She was last seen on April 22 of this year, six months after beginning treatment. She was entirely relieved of all symptoms, afebrile and feeling better than she had for years. On that date agglutination tests were entirely negative but the Foshay index number had risen to 80. This is one of the nicest results I have seen chiefly because of the improved mental condition of this previously badly discouraged individual.

Case 4. A. B. J., single, white female, aged 26 years. This girl was first seen at the office on January 18, 1934, complaining of weakness, insomnia, night sweats and severe aching of the lower back and thighs. Symptoms had been present for three years. She had run low grade fever intermittently. Symptoms were always aggravated at her menstrual periods and severe dysmenorrhea had developed coincident with her other complaints. Her history is much too long even to give in abstract but briefly she was repeatedly hospitalized and subjected to nearly every known test and examination without benefit. She was seen repeatedly in consultation, all sorts of roentgen rays were made and laboratory work of every description was done. In May, 1935, she was diagnosed as neurotic and sent home under symptomatic treatment.

Examination had shown a poorly nourished girl, greatly depressed and always complaining of aches and pains for which no cause could be found. She did have a secondary anemia and chest plates showed old, healed tuberculosis. Because of her severe dysmenorrhea and abdominal pain an exploratory laparotomy was finally done. Both tubes were found to be studded with minute abscesses resembling closely miliary tuberculosis. Both tubes were removed and pathological examination showed only round cell infiltration. They were not tuberculous and the final report was simply inflammatory tissue.

Her last admission to the hospital was on September 20, 1937. She was again worked up thoroughly and nothing found except questionable activity in the old tuberculous process in her right apex. The low grade fever was still present and the same complaints were enumerated. She was then given the skin test for undulant fever and a positive reading was obtained. The opsonic index determinations showed a Foshay index of 76.

She was started on Foshay's vaccine and sent home on October 21, 1937, for treatment by her family physi-

cian. Improvement has been slow but she does feel better. She still runs low grade fever at times but is stronger, the pains are less severe, appetite has improved and she has made a slight gain in weight.

It is a question whether this girl will ever be well. Certainly treatment will have to be carried out for a long time. Incidentally, after the diagnosis was made, the three year old blocks of tissue in the laboratory were again sectioned and stained by Gram's method. Numerous small coccobacilli were seen which were gram negative and morphologically identical with bacillus abortus. I have no doubt this infection caused her pelvic infection.

Case 5. M. B., a 28 year old married woman, was seen at the office for the first time on October 20, 1936. She gave a history of low grade fever for several months together with loss of strength, periodic aching of muscles and joints and a feeling of being always tired. She was nervous and trembled easily. In 1928 she was operated upon for a ruptured right ovarian cyst and a ruptured appendix. In 1935 she was seen by a gynecologist for sterility and backache. She was given the Ruben test. This was followed by pelvic inflammation and a localized peritonitis.

Other illnesses have included severe headaches with impaired vision and an acute maxillary sinusitis. In 1936 agglutinations were positive for undulant fever and she was given a complete course of vaccine therapy with one of the well known commercial vaccines. She did not improve and was later given intravenous mercurochrome and metaphen without relief. In November, 1936, she was sent to Barnes Hospital and given three treatments with the artificial fever machine. She was greatly improved, felt much better and was much less tired. Fever was now absent.

Ten months later symptoms returned as bad as ever and the patient was greatly disappointed and depressed. She was then started on Foshay's vaccine in small doses of T12 since it was found she could not tolerate the usual concentrations. She has improved steadily and at present feels perfectly well and is normal in every way. The problem now seems to be that of keeping her on small doses of vaccine regularly in order to prevent a recurrence of this persistent infection.

#### CONCLUSION

In conclusion I can only say that were it not for the fact that I have been through the mill myself I would be as skeptical as the next one. However, after dragging around at about 50 per cent efficiency for years and then finding relief, it is easy to believe that there are others in the same category as I.

Methods of diagnosis and treatment are still imperfect but the fact remains that these people can be helped in most instances.

We are now in the stage of uncertainty and expecting too much from the laboratory tests before being willing to undertake treatment. I have no doubt that as time goes on we will realize that most of our mistakes are in not recognizing the disease rather than in finding too many cases.

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## PRACTICAL METHODS OF CASE FINDING

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Over fifty years ago Robert Koch announced to the world that consumption, or tuberculosis, was caused by a germ and demonstrated conclusively that where there are no tubercle bacilli there can be no tuberculosis. With this fact established the fighters against this dread disease have succeeded in reducing the national death rate from this cause from several hundred deaths per hundred thousand to fifty-six per hundred thousand.

For more than fifty years we have known that tuberculosis is a preventable disease, but there is still a great gap between what we know can be done and what we are now doing. After all these years of effort in tuberculosis control tuberculosis is still among the leading, if not the leading, cause of preventable death. It is still public enemy No. 1 as far as the youth of the country is concerned. In Missouri tuberculosis still ranks sixth as the cause of death. In 1935 there were 2210 reported deaths from tuberculosis in Missouri. The number of deaths per year multiplied by ten is the method frequently used for computing the number of cases of tuberculosis. If that method of computation is correct, Missouri has approximately 20,000 cases of tuberculosis.

Dr. Koch gave us the fundamentals for tuberculosis control. He was not guessing. We are not wrong when we say that tuberculosis is preventable and curable. The problem is to close the gap between what we know and what we do, to use the knowledge we now have more intelligently and more effectively.

Tuberculosis, long thought to be hereditary, must still be considered a "family" disease because contact among members of the family is so close that the danger of infection is great and hard to avoid. Members of a family living with another member who has active tuberculosis with positive sputum must inevitably become infected unless the most drastic precautions are taken. For this very reason it is now thought that isolation and hospitalization of such persons is almost equal in importance to the care of the patients themselves.

Figures and statistics always tend to make a paper less interesting and harder to follow, but nevertheless I will take that chance because certain figures are so to the point and illustrate so well what we are trying to bring out in this paper. Several days ago I examined the records of our present patients at the Missouri State Sanatorium to determine how many of them have or have had other members in the immediate family with tuberculosis. Only brothers or sisters, parents, husband or wife and children were considered. Grandpar-

Delivered at the annual meeting of the Missouri Tuberculosis Association, Jefferson City, Missouri, October 16, 1937.

Acknowledgment is also made of helpful discussions with W. J. Bryan, M.D., formerly Superintendent and Medical Director of the Missouri Sanatorium and now Superintendent of the Rockford Tuberculosis Sanatorium, Rockford, Ill.



ents, uncles, aunts and cousins were not considered, even though they lived with the patient's family. Histories of 487 patients were checked. Of these 220, or 45 per cent, showed other members in the immediate family with tuberculosis. The relationships of these persons were as follow: Brothers or sisters, 117; mothers, 72; fathers, 39; both parents, 12; husband or wife, 29, and children, 11.

These 220 patients accounted for 341 cases of tuberculosis. In the majority of the 267 cases marked negative in this series, other members of the family have not been examined and we feel sure if such examinations were made that many of them would be found among the positives. The dangers to which members of a family in which there is a tuberculous patient are exposed is something which in the past years has been given little thought by many physicians; or practitioners have been restrained by lack of time and funds from taking the necessary steps to protect the family. The general practitioner should be the vitalizing force in any program of tuberculosis control. They must bear in mind that all victims of tuberculosis now filling graves were once early cases. They must be prepared, with the aid and cooperation of well organized health departments, to assume the responsibility of these family groups. Here is a real opportunity for valuable and lasting service.

When we take a case of pulmonary tuberculosis, curable or incurable, out of the home and spend the state's money for the care of that patient, let us also be spending the state's money in a program of control; a program which will endeavor to see that there shall develop from these cases no more victims of the disease to become charges of the state and, if other cases should develop, they should be diagnosed before the more advanced stages are reached when so little can be done for them and such prolonged periods of hospitalization are required.

The problem of tuberculosis control and its advance must rest on case finding, the uncovering and isolation of all unknown foci of infection and then, when funds are available for the progression of this work, we who are doing the work must see that the money is wisely expended. When we have limited funds and limited personnel for the work the relative value of different case finding methods must be investigated. Tuberculosis is tuberculosis and a new case is a find whenever and however we find it. That method which will uncover new cases at the smallest cost per new case should receive serious consideration.

Tuberculin testing and roentgen raying of school children have been used quite extensively as a case finding method; yet some of us who have reviewed the results and compared them with the results of other methods have been wondering if the enthusiasm for this method has not been allowed to overshadow the method of investigation of the fundamental sources of tuberculosis; namely, the contacts. We at the Sanatorium are satisfied that it is from this group that the richest harvest for our

efforts will be reaped. We are certain that if all our contacts were followed as thoroughly as possible the number of new cases discovered through the testing of school children would be considerably less.

In a survey made in Cattaraugus County, New York, and reported by Jean Downes of the Milbank Memorial Foundation, it was found that by far the greatest number of new cases were obtained by examining contacts of known cases reported by physicians. The following results were reported: Of 1386 referred by private physicians, 10 per cent were tuberculous; of 969 referred by public health nurses, 2 per cent were tuberculous; of 1126 referred by all other sources, 2 per cent were tuberculous, and of 1437 school children examined by tuberculin tests and roentgen rays none had tuberculosis.

Chadwick in the course of a ten year program in which 400,000 school children were tested found the adult type of tuberculosis in one out of every 1500 tested.

William Paul Brown<sup>1</sup> submits some interesting figures in regard to the cost of tuberculin surveys. In a study of 18,707 pupils, 43 of whom showed some activity, the cost of the survey was \$9,000, or an average cost of \$209 per diagnosis.

It is neither my purpose nor wish to discourage tuberculin surveys of schools, but I believe that those sponsoring such surveys should be given some idea of the cost and the results that can be expected. There are throughout the country too many tuberculin ventures which can have no productive results whatever.

It is generally conceded that when a child is found with a positive tuberculin test the family of that individual should be investigated. To do the tuberculin tests and roentgen rays of the positive reactors without a good follow-up system takes time, money and effort which could well be diverted to other channels. The follow-up is the most important part of the survey and implies not only thorough observation of the child, but investigation of the home environment and social contacts.

We feel that a workable and fairly economical case finding program could be worked out in Missouri at this time by investigating the contacts of known cases of tuberculosis. For a starting point the county health officer could be supplied with a list of names of the patients from that county who have been in the State Sanatorium in the last five or ten years. Additional names could be secured from the Bureau of Vital Statistics. If finding new cases is our aim, this is the path to a very fertile field.

Tuberculosis control is a problem the administration of which naturally falls to the Department of Public Health. Private physicians cannot be expected to spend the time or the funds necessary to fight the battle alone; yet there can be no effective tuberculosis control without the cooperation of the physicians. In tuberculosis the duty of the physician does not end with the patient, but in fact

just begins. The close cooperation of the physicians with the school nurses, public health nurses and other health authorities is essential. When the open case of tuberculosis is discovered in the home the first consideration should be hospitalization of the patient, or, in rare instances, arrangements made for home treatment. The fact that tuberculosis is contagious should then be brought to the attention of every member of the family and a real effort made to protect other members of the family.

The old saying "an ounce of prevention is worth a pound of cure" is more than true in tuberculosis. The public has been more or less complacent in regard to tuberculosis, new cases being taken for granted as something we should expect and can do little about. When our citizens become so interested and so aroused as to demand a curbing of our greatest public health enemy, then we can achieve the results obtained in other public health endeavors.

Missouri State Sanatorium.

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## SUPERIOR PULMONARY SULCUS TUMOR SYNDROME

### A CASE REPORT

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AND

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Pancoast described the superior pulmonary sulcus tumor syndrome as a clinical entity in 1924. A number of similar cases have since been reported. Guillain and Sterne<sup>1</sup> quote Ricaldoni's case reported in 1917; Freeman<sup>2</sup> reported a case in 1921. Pancoast made his first contribution in 1924<sup>3</sup> and another in 1932.<sup>4</sup> Other case reports to be found are by Clarke,<sup>5</sup> Jacox,<sup>6</sup> Steiner and Francis,<sup>7</sup> Fried,<sup>8</sup> De Jong<sup>9</sup> (case 5), Browder and DeVeer,<sup>10</sup> Graef and Steinberg,<sup>11</sup> Frost and Wolpaw,<sup>12</sup> Marcil and Crawford,<sup>13</sup> Moschcowitz<sup>14</sup> and Connolly.<sup>15</sup>

Guillain and Sterne cite ten South American and French authors besides a case of their own.

Pancoast's important contribution was in emphasizing the important clinical and roentgenological manifestations of this syndrome. These are "(1) pain around the shoulder and down the arm; (2) loss of power and wasting of the muscles of the hand; (3) presence of a Horner's syndrome, and (4) a characteristic roentgenological picture of a comparatively small and circumscribed shadow in the apex due to lung displacement, together with destruction of the posterior portions of one or more ribs and the adjacent articular and transverse processes and possible involvement of the borders on one or more vertebrae."<sup>5</sup>

Our clinical findings with a complete autopsy report follow.

#### REPORT OF CASE

*Clinical History.*—J. S., white male, married, aged 60, foreman, was referred to the St. Louis City Hospital from a private hospital on August 15, 1937. The chief complaints were weakness, loss of 40 pounds of weight in the last three months and pain for three months in the right upper chest and shoulder, chiefly in the right axilla and radiating down the right arm to the fingers. The pain occurred in paroxysms and had no relation to activity. During the last month the pain was more or less constant and movement of the right arm caused severe discomfort. The condition became increasingly severe, and patient noticed numbness and weakness in the right arm and atrophy of the muscles of the shoulder, arm and hand.

Patient had been below par for three years; during this period had lost a total of 70 pounds of weight, 40 of which were lost since the pain appeared in the right shoulder. No history of cough, hemoptysis or night sweats. At 22 patient had a chancre which was treated locally and was followed with injections for one year.

*Physical Examination.*—A rather tall but emaciated white male of 60 years showed evidence of recent loss of weight. Skin was wrinkled and hung in folds about the abdomen. Pupils reacted to light and accommodation. Eye grounds negative.

There was a typical Claude-Bernard-Horner's syndrome on the right with ptosis, myosis, enophthalmos and anhydrosis. Right shoulder was much lower than the left and right arm was held close to the chest, flexed at the elbow and wrist. There was marked muscular atrophy of both arm and forearm with some fibrillary tremor of the latter musculature. Slight tremor of the extended hand was noted. Pressure over the shoulder, bending the neck forward and tapping of lower cervical and upper thoracic vertebrae precipitated attacks of severe shooting pain down the arm. Marked weakness in the right arm and grip was poor; movement of arm caused shooting pains down the posterior and medial aspects. Biceps reflex was absent on the right side but present on the left. Triceps and periosteal reflexes were present but not hyperactive. Careful sensory examination of right arm showed impaired sensation to pain and temperature anteriorly over seventh and eighth cervical segments, and posteriorly over the sixth cervical segment. Definite absence of pain and temperature over the first thoracic segment anteriorly and posteriorly. Light touch was impaired anteriorly and posteriorly over the hand, corresponding to the eighth cervical and first thoracic segments. There was a Babinski sign on the right. The systolic blood pressure was 130, the diastolic 84.

*Laboratory Findings.*—Lumbar puncture with Queckenstedt test was done on three occasions and showed an average initial pressure of 60 mm. of water, right jugular compression 55 mm. of water, left 80 mm. of water, and straining to 300 mm. of water. Total protein determination on July 15, 1937, showed 50 mg. per cent; on August 17, 1937, 30.1 mg. per cent, and on October 12, 1937, 218.1 mg. per cent. All determinations of blood Wassermann and Kahn and spinal fluid Wassermann with colloidal gold were negative. Blood count was within normal limits on entry but later showed a decrease in red blood count and Hb. per cent. Blood chemistry was normal.

*Roentgen Examination.*—On admission, roentgram of the right shoulder, cervical and thoracic vertebrae failed to reveal any definite evidence of pathology. Chest examination revealed increased density in apex of right lung and also erosion with almost complete destruction of the first rib on the right. Lipiodol injection done

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some two weeks later showed only suggestive slowing of opaque material around the eighth cervical and first thoracic segments.

A diagnosis of lung tumor with metastases to spine and spinal cord was made.

*Clinical Course.*—On entry the patient was able to walk and complained only at intervals when pain radiated down his arm. Following the first lumbar puncture the patient was relieved of pain and was comfortable for some two days. However, the pain again returned and seemed to increase in intensity. Patient's arm slowly became weaker and discomfort was relieved by holding the arm close to the chest, flexed at the elbow and wrist. On several occasions the patient was seen by a neurological surgeon who considered the condition not amenable to surgery. Lipiodol injection showed a slight slowing or retardation in the fluid at the eighth cervical. All primary complaints of pain and weakness increased and eight months after the initial pain in shoulder the patient died. Supportive and symptomatic treatment throughout the course did not improve the condition.

*Anatomical Diagnosis.*—(1) Lung, carcinoma, (2) metastases to first and second dorsal vertebrae and compression of spinal cord, (3) arteriosclerosis, (4) bronchopneumonia, and (5) spleen, amyloidosis.

*Autopsy.*—Autopsy performed eight hours after death showed the body of a moderately well developed but poorly nourished 60 year old white male. The eyes, ears and mouth were negative externally. There was no lymphadenopathy, the abdomen was flat and the genitalia normal. The muscles of the right shoulder girdle and upper arm were atrophic and less prominent than those on the left.

Grossly the pericardial cavity, heart, thyroid, larynx, trachea, peritoneal cavity, liver, gallbladder, pancreas, gastro-intestinal tract, kidneys, bladder, prostate and cranial cavity were within normal limits. The aorta was involved by a number of atheromatous plaques increasing in number in the abdominal portion. Slight ulceration was noted in the lower plaques. In the pleural cavities there were a few thin fibrous adhesions binding the posterior portions of both lungs to the chest wall. The upper part of the right chest wall was infiltrated by similar dense white cartilaginous tissue which surrounded the subclavian artery. A number of large, white, flat cartilaginous plaques were scattered over the posterior pleura and on the upper surface of the dome of the left side of the diaphragm. Some lipping of the bodies of the eleventh and twelfth dorsal vertebrae was noted. Both lungs were heavy and boggy but of normal size and shape. Crepitation was present in the anterior portions of the lungs and there were a number of large emphysematous blebs along the lung borders. On section the thickened tissue over the right upper lobe apparently did not invade the pulmonary tissue. A dark red fluid could be expressed from the lung and a few small purulent patches were seen. No thrombosis or obstructions of the tracheobronchial tree were found. The spleen had a few white thickened plaques in the capsule and the pulp was soft and red. The bodies of the second and third thoracic vertebrae were soft and infiltrated with a white firm cartilaginous tissue similar to that seen in the upper part of the right chest wall. This tissue had grown around the spinal canal and compressed the cord but the dura was not invaded by the tissue.

Microscopic section exhibited essentially normal findings in the heart, thyroid, liver, pancreas, adrenals, kidney, prostate, pituitary and brain. First section of the lung showed a typical pneumonic process, the second section the same, while in the third section from the upper portion of the right upper lobe there were areas of fibrosis in which penetrating cords of large polyhedral cells with large irregular hyperchromatic

nuclei could be seen. The vessels in the section had tumor cells growing into their lumens. In one area the cords of tumor cells were packed closely together and a plate of hyaline cartilage was completely surrounded on all sides by tumor. This was a remnant of a small bronchus. Likewise the pleura section from the pleura covering of the right apex exhibited cords of tumor cells. A portion of the lung parenchyma was adherent to one side of the pleura, a few thrombosed vessels were noted and a few areas of black pigment. Second section from the right apex inward showed invasion by tumor. The small white plaques on the chest wall were pink staining hyaline tissue. Some small foci of round cell infiltration were present in the pleura. The vertebral sections of the arch of the second dorsal vertebra showed spicules of bone infiltrated by tumor tissue describing pseudo-alveolar formation. The spinal dura was not penetrated by tumor tissue but some was adherent to the external surface. Cord degeneration was noted at the level of compression but none above or below. Amyloidosis of the spleen was noted with a large number of small deposits of amyloid throughout the malpighian corpuscles.

#### COMMENT

This case presents the main features of the superior pulmonary sulcus tumor syndrome so ably described by Pancoast. It is of interest that this case was first brought to the attention of the neurologist because of the possibility of the cord tumor. That is not uncommon in these cases. Careful study, however, revealed the true focus of the involvement and the cord involvement as secondary.

It is of interest, also, to note that our pathologist, Dr. Paul Wheeler, does not believe that this is a primary malignancy of the bronchial cleft as suggested by Pancoast but rather one of the bronchiogenic type so frequently found in the lungs. In classing this with other cases of the syndrome it is considered that the location of the neoplasm rather than its type is the criterion for diagnosis, which is in accord with the ideas of the various authors cited above.

#### SUMMARY

1. A case of superior pulmonary sulcus tumor is reported.
2. A bronchiogenic type of tumor with secondary cord involvement was found.

We wish to thank our pathologist, Dr. Paul Wheeler, for his cooperation and kindness.

Lister Building,  
St. Louis City Hospital.

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# THE JOURNAL

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OCTOBER, 1938

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## EDITORIALS

### DR. E. J. GOODWIN ELECTED SECRETARY-EDITOR EMERITUS

Dr. E. J. Goodwin, St. Louis, Secretary-Editor of the Missouri State Medical Association since 1910, upon his request to be relieved of his duties, was elected Secretary-Editor Emeritus for life by the Council at a meeting in Jefferson City, August 31.

Dr. Goodwin was first identified with the Association in 1902 when he became associate recording secretary and official reporter of the Association. Dr. C. M. Nicholson, St. Louis, was elected recording secretary at that session which was held in St. Joseph. In 1903 Dr. Goodwin was elected assistant secretary, the year in which the present system of organization was adopted to conform with the new Constitution and By-Laws of the American Medical Association.

In 1904 the Secretary, Dr. Nicholson, presented the suggestion that the transactions of the association be printed in journal form rather than in one volume as had been done previously. The Council decided upon this form of publication and the first issue of THE JOURNAL of the MISSOURI STATE MEDICAL ASSOCIATION was published in July, 1904. Dr. Nicholson was made editor and chairman of the Publication Committee. Dr. Goodwin was made associate editor in 1905 and editor in 1906.

Dr. A. W. McAlester, Jr., Kansas City, who was elected Secretary in 1907 to succeed Dr. Nicholson, resigned in 1910 and Dr. Goodwin was elected Secretary-Editor on May 4, 1910. Since that time he has continuously served in that capacity.

Dr. Goodwin is dean of secretaries and editors of state medical associations, having served longer in those capacities than has any other man in this country. Close in line of service is Dr. Edgar A. Hines, Seneca, South Carolina, who has been secretary of the South Carolina Medical Association



DR. E. J. GOODWIN

since 1910 and editor of the state medical journal since 1911.

From 1903 to 1910 Dr. Goodwin was associate editor of the *Interstate Medical Journal* and in 1905 he published the book "Medicine in Missouri."

During the periods from 1909 to 1919 and from 1925 to 1935 Dr. Goodwin served as delegate to the American Medical Association. He became a great favorite with many of the delegates, many of whom are still serving as delegates from their respective states. He consistently refused to accept appointments on any important committee to serve the American Medical Association between sessions, preferring always to have these appointments go to the members of the Association who were in practice and who were active in the growth of the State Association. However his counsel was always available and often sought by influential committees.

Previous to 1910 the Association had no office, all records being kept in the office of the Secretary. In 1910 an office was established at 3525 Pine Street in the building then occupied by the St. Louis Medical Library Society, a separate organization from the St. Louis Medical Society. In 1924 the Association moved to the Missouri Theatre Building, the first tenant of the building after its completion.

Previous to the reorganization the Association had little or no influence in legislative matters. Gradually the Association began to attempt to guide legislative matters that affected the practice of medicine and Dr. Goodwin spent much time in Jefferson City during each year the legislature met, keeping members informed of the status of bills and calling members to attend hearings or interview legislators in their home towns. Later the



Association employed a layman for the legislative work.

Dr. Goodwin was born August 3, 1864, in Washington, Missouri. He decided to study medicine at about 12 years of age. His father was in the hospital service during the Civil War and medical books brought back by him increased Dr. Goodwin's interest and furnished his first medical textbooks which he eagerly studied. He attended the public schools and Smith Academy in St. Louis, working between sessions to finance his schooling. It was not until 1891 that he was able to enter medical school and continue his studies until graduation in 1894, when he was 28 years old. For several years after he was 16 years old he was admittance clerk at the City Hospital and was allowed to watch operations. Dr. D. V. Dean was superintendent of the hospital. Here Dr. Goodwin met several interns who became fast friends in later years.

After graduating from the St. Louis Medical College in 1894 he began his practice on Hodiament Avenue. He had practiced little longer than a year when an accident while alighting from a street car resulted in a paraplegia that totally incapacitated him for three years and made any future practice of medicine impossible. After sufficient recovery he worked in the office of Dr. Paul Y. Tupper as stenographer and bookkeeper until the time he accepted the position as associate editor of the *Interstate Medical Journal* in 1903. Dr. Tupper had been his preceptor in medical school.

For thirty-five years Dr. Goodwin has devoted his energy and ability to the Association and has influenced its growth and success more than any other one person. While it was not his choice as a life work he has made it a work of which he can be justly proud and for which the Association is deeply indebted.

While Dr. Goodwin has been relieved of the strenuous detailed responsibilities of his office, yet under this arrangement his competent advice and counsel will continue to be available to the Association.

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#### ORGANIZATION ACTIVITIES

Activities of the Association dealing with organization phases have taken a prominent place in medical practice in recent years and matters apart from scientific medicine have grown to have new value for the profession. Since the last issue of *THE JOURNAL* the House of Delegates of the American Medical Association has held a called Session dealing with the National Health Conference; the Council of the Missouri State Medical Association has met, and committees of the Association have been active. Information on these matters appear following the news columns in this issue of *THE JOURNAL*, page 411, under the caption "Organization Activities."

#### EXTEND HOSPITAL SERVICE

Group Hospital Service, as an integral part of a comprehensive medical economic program adopted by the Missouri State Medical Association some four years ago, has now been in operation in St. Louis for two and a half years. It was created to insure good hospital care to the people. The second annual report of the organization presents a record of magnificent accomplishment. Expansion of its activity is well merited by the past accomplishments. A pleasing aspect of the plan is that it agrees perfectly with the tenets of the American Medical Association. The trustees who have devoted an immense amount of time and effort to the development of this service have much reason to be pleased with the increasing acceptance accorded the plan by various county medical societies. It is not too much to anticipate that within a few months the entire state will be organized so that the advantage of the plan may be offered each citizen, the final beneficiary of any medical society activity.

The financial integrity of the enterprise is of first consideration in a voluntary prepayment project. Obviously if more than a certain percentage of subscribers become ill, the income from the remainder would be insufficient to meet the cost of hospitalization. National and local statistics demonstrate that one out of each fourteen members of the population requires hospital care during the course of any one year. That was precisely the experience of Group Hospital Service. There has been no tendency among subscribers to take advantage of the privileges guaranteed them by the participating hospitals.

A better picture is afforded by consideration of the ratio between anticipated and actual cost of hospital care. Following accepted actuarial principles Group Hospital Service sets aside a portion of each month's income to pay for the care anticipated for that month. During twenty-four months of operation only once has the expenditure been greater than the anticipated requirement. In all other months the surplus created has been added to the reserve, sometimes nearly \$5000. The reserve so created is now over \$100,000. This proof of actuarial soundness alone merits the thorough consideration by all medical societies which might sponsor a similar service. This finding may also be brought to the attention of the business men of any community as proof that they may wholeheartedly endorse the method and promote its widest possible utilization.

A great merit of Group Hospital Service lies in the statistical accuracy with which its operations are conducted. It is so constituted that control is exerted over those social and occupational groups which are acceptable for membership. In this manner a fine balance is maintained in order to continue a favorable financial showing. For example, it is a matter of general knowledge that women require more hospitalization than men. Yet the record shows slightly fewer than half of the subscribers

to be female. Nevertheless nearly two thirds of those requiring hospital care were women. Had uncontrolled enrollment been allowed an unfavorable experience might have resulted. Analysis showed that teachers and members of other professional groups required somewhat more hospital care than that to which their numerical membership entitled them. In order to preserve that stability of operation which has characterized Group Hospital Service since its inception it would be entirely fitting and proper were other members of these occupational groups to be excluded from enrollment until a better ratio is again achieved.

Hospitals have been benefited by the plan. While the average stay of 1600 patients has been less than ten days, between two and three days less than the national average experience, the extra charges paid by these patients have brought the average per diem income derived from this group by the hospital to over \$7 a day, more than enough to meet the cost of good hospital management.

The lessened duration of hospital stay may be interpreted to mean that patients are receiving hospital care earlier than heretofore. Disease being less advanced at entry, recovery is more prompt. Days lost from gainful employment are fewer. If this system were extended to include every member of the community the benefit to industry would prove incalculable for the annual economic loss due to illness reaches staggering proportions. If recovery occurs earlier there must be a corresponding gain to industry. To the individual this means less interruption of income. That subscribers are amply satisfied is evidenced by less than 2 per cent of them canceling their membership.

The medical profession itself has benefited in three ways from the operation of Group Hospital Service. It may safely be assumed that patients relieved of the burden of hospital bills have paid their physicians more promptly; of infinitely greater importance, the plan retains within the profession control over what might prove in other hands to be merely ill conceived promotional ventures, and the prestige of the medical society in the community is enhanced as it renders a socially valuable service.

Group Hospital Service is now encompassing the State of Missouri. The cities which have inaugurated Group Hospital Service, or have plans under way, are Kansas City, Cape Girardeau, Boonville, St. Joseph, Springfield, Jefferson City, Ironton, Marshall, Washington and Hannibal.

Group Hospital Service has accumulated valuable statistical information on the incidence and nature of illness. Bookkeeping methods make this information impersonal but the aggregate health experience of thousands of individuals cannot fail to be of utmost value to persons concerned with the public health. Each of the component societies in the Association will perform a valuable service to its community as it advances the interests of Group Hospital Service and sees that its facilities are utilized. Further information may be secured by writ-

ing the office of the Missouri State Medical Association.

## PSYCHIATRY AND GENERAL PRACTICE

To a great many practicing physicians it is strange to link psychiatry, the study of mental diseases, with general practice. The average family physician cannot see what psychiatry can possibly teach him that can be applied to his practice. When he went to school he probably had a few cursory lectures on the outstanding types of mental diseases from a descriptive standpoint. Psychobiology, the study of human personality and its development and reactions, and psychopathology, the study of mental abnormalities and their causes, were not mentioned, much less discussed. Psychiatry, therefore, to the average physician remains the great mystery of the medical field.

There is nothing mysterious about psychiatry if the modern concepts are constantly kept in the foreground whenever some functional problem involving the nervous system presents itself.

It is important to remember that a "mental disease" manifests itself through a variety of symptoms. These symptoms are reactions to various conditions and circumstances. As yet there is no workable theory to explain the abnormal function of the nervous system which produces these symptoms. However, while a satisfactory theory would be an important contribution to the knowledge of mental illness, it is not vitally important in the understanding of the various mental abnormalities. It is important, however, to remember that nervousness, insomnia, delusions, emotionalism and the many other manifestations of mental unrest come under this heading.

When a problem in the mental field is approached with these things in mind, there is bound to be a greater understanding of the problem. The older descriptive approach with its rigid classification leads one astray because few conditions in the early stages fit into these arbitrary groupings and while the physician is watching and waiting for diagnostic criteria to appear, the most favorable time of treatment may pass.

It is likewise important to remember that mental conditions are not static. They are progressive and fluctuating in their manifestations. The reactions of the patient change daily and hourly. This is easily understandable if every one will keep in mind that mental conditions are not so much a matter of quality as of degree; that is, the manifestations are largely an exaggeration, an increase in severity of many characteristics of human behavior which are considered normal by every one. An example of this is religion and the religious manifestations in a psychosis. Religion in its proper position is an accepted part of the lives of most men and women. But when an individual begins to undergo a change and carries religious fervor to excess, a mental disease has developed in a hitherto normal individual. Excess in spending, con-



servatism, activity and emotional fluctuations are common manifestations, yet these are normal characteristics of human behavior when they are in proper balance with other factors of the functioning of the mind.

Every physician should keep in mind that the functions of the mind are reactions of the organism to its environment and the mental diseases are nothing more or less than excessive or abnormal reactions. The individual has changed and no longer reacts as he formerly did to his own environment. It is true that these abnormal reactions usually fit into broad generalizations of classification, but the important thing is to know that a mental disease is present rather than to wait until it can be classified. If all mental diseases were recognized as mental diseases at onset and the proper treatment started, much of the chronic mental abnormalities would be prevented and many of the unfortunates in the state hospitals would have been treated when treatment could help and chronicity could have been avoided.

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## NEWS NOTES

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A memorial to the memory of Dr. Louis B. McBrayer, Southern Pines, North Carolina, is being planned by the Medical Society of the State of North Carolina and the North Carolina Tuberculosis Association.

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Drs. R. S. Weiss and Adolph H. Conrad, St. Louis, were the guests of the Williamson County (Illinois) Medical Society at Herrin, Illinois, on September 8. Dr. Weiss gave a talk on "The Treatment of the Common Skin Diseases," and Dr. Conrad spoke on "The Precancerous Dermatoses."

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A PWA grant of \$409,090 toward construction of the Ellis Fischel Hospital for indigent cancer patients at Columbia has been announced by Mr. F. T. Hodgdon, Hannibal, chairman of the State Cancer Commission. Together with the appropriation voted by the Missouri state legislature there will be \$909,090 available for the new hospital.

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The fourth annual campaign against diphtheria will be conducted in St. Louis during October by the Health Division of the St. Louis Department of Public Welfare. During the first eight months of 1934, before the first campaign, 584 children in St. Louis developed diphtheria and twenty-two of them died. During the first eight months of 1938 there were 128 cases and two deaths. This is a decrease of 78 per cent of the number of cases and 90 per cent in the number of deaths. Of all St. Louis children who died in 1937 of diphtheria 94 per cent had not been immunized with toxoid or tested for immunity.

Members are warned against a man who has been operating in several sections of the state, collecting cash payments in advance for repairing instruments and not returning the instruments. Various names have been used and different addresses given. All addresses have proved nonexistent, vacant lots, or parking lots. The matter is in the hands of the St. Louis police and members are requested to report any knowledge of the man to the police or the Association office.

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The American Physicians Art Association is planning an exhibition of works of art produced by physicians throughout the country at the time of the American Medical Association Session in St. Louis, May 15 to 19, 1939. The exhibit will embrace paintings, sculpture, etchings, carvings, works in metal and photography. It will be housed in the City Art Museum in Forest Park, St. Louis. It is hoped that physicians of the State of Missouri who work in the arts will exhibit and the St. Louis committee, which has charge of arrangements, will be glad to know of any who are inclined artistically. Any physician who works in any of these media and who would care to exhibit is asked to communicate with Dr. Frederick O. Schwartz, 508 North Grand Boulevard, St. Louis, chairman of the committee.

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The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Abbott Laboratories  
Sulfanilamide—Abbott, Ampoules (Crystals), 1 Gm.  
Gane & Ingram, Inc.  
Ephedrine Alkaloid Anhydrous  
Ephedrine Alkaloid Hemihydrate  
Gilliland Laboratories  
Typhoid Vaccine (Gilliland), 50 c.c. size package  
McKesson & Robbins, Inc.  
McKesson's Cod Liver Oil Concentrate in Oil  
Upjohn Company  
Tablets Phenobarbital—Upjohn, ¼ grain  
Tablets Phenobarbital—Upjohn, ½ grain  
Tablets Phenobarbital—Upjohn, 1½ grains  
Staphylococcus Mixed Vaccine  
Typhoid Vaccine  
Typhoid Paratyphoid Mixed Vaccine

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E. R. Squibb & Sons will open the Squibb Institute for Medical Research at New Brunswick, New Jersey, on October 11. A reception will be held at 12:30 followed by a luncheon and program. Appearing on the program will be Mr. Carleton H. Palmer, President, and Dr. John F. Anderson, Vice President, of E. R. Squibb & Sons; Dr. George R. Minot, Director of Thorndyke Memorial Laboratory, Boston; Dr. Russell M. Wilder, Professor of

Medicine, Mayo Foundation, Rochester; Prof. August Krogh, University of Copenhagen, Copenhagen, Denmark, and Dr. Abraham Flexner, Director of Institute for Advanced Study, Princeton, New Jersey. Dr. George A. Harrop, Director of the Institute, will introduce the speakers. The Institute will be an industry-supported research enterprise in the medical and biological fields. Four phases of work will be emphasized, experimental medicine, pharmacology, bacteriology and virus diseases, and organic chemistry. Dr. George A. Harrop, formerly associate professor of medicine in Johns Hopkins University and associate physician of Johns Hopkins Hospital, has been appointed director of research of the Institute.

## ORGANIZATION ACTIVITIES

### AMERICAN MEDICAL ASSOCIATION SPECIAL SESSION

The following recommendations on the National Health Program were adopted at the Special Session of the House of Delegates of the American Medical Association in Chicago, September 16 and 17:

Since it is evident that the physicians of this nation, as represented by the members of this House of Delegates convened in special session, favor definite and decisive action now, your committee submits the following for your approval:

1. Under Recommendation I on Expansion of Public Health Services: (1) Your committee recommends the establishment of a federal department of health with a secretary who shall be a doctor of medicine and a member of the President's cabinet. (2) The general principles outlined by the Technical Committee for the expansion of Public Health and Maternal and Child Health Services are approved and the American Medical Association definitely seeks to cooperate in developing efficient and economical ways and means of putting into effect this recommendation. (3) Any expenditures made for the expansion of public health and maternal and child health services should not include the treatment of disease except in so far as this cannot be successfully accomplished through the private practitioner.

2. Under Recommendation II on Expansion of Hospital Facilities: Your committee favors the expansion of general hospital facilities where need exists. The hospital situation would indicate that there is at present greater need for the use of existing hospital facilities than for additional hospitals.

Your committee heartily recommends the approval of the recommendation of the technical committee stressing the use of existing hospital facilities. The stability and efficiency of many existing church and voluntary hospitals could be assured by the payment to them of the costs of the necessary hospitalization of the medically indigent.

3. Under Recommendation III on Medical Care for the Medically Needy: Your committee advocates recognition of the principle that the complete medical care of the indigent is a responsibility of the community, medical and allied professions and that such care should be organized by local governmental units and supported by tax funds.

Since the indigent now constitute a large group in the population, your committee recognizes that the necessity for state aid for medical care may arise in poorer communities and the federal government may need to provide funds when the state is unable to meet these emergencies.

Reports of the Bureau of the Census, of the U. S. Public Health Service and of life insurance companies show that great progress has been made in the United States in the reduction of morbidity and mortality among all classes of people. This reflects the good quality of medical care now provided. Your committee wishes to see continued and improved the methods and practices which have brought us to this present high plane.

Your committee wishes to see established well coordinated programs in the various states in the nation, for improvement of food, housing and the other environmental conditions which have the greatest influence on the health of our citizens. Your committee wishes also to see established a definite and far reaching public health program for the education and information of all the people in order that they may take advantage of the present medical service available in this country.

In the face of the vanishing support of philanthropy, the medical profession as a whole will welcome the appropriation of funds to provide medical care for the medically needy, provided, first, that the public welfare administrative procedures are simplified and coordinated; and, second, that the provision of medical services is arranged by responsible local public officials in cooperation with the local medical profession and its allied groups.

Your committee feels that in each state a system should be developed to meet the recommendation of the National Health Conference in conformity with its suggestion that "the role of the federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice."

4. Under Recommendation IV on a General Program of Medical Care: Your committee approves the principle of hospital service insurance which is being widely adopted throughout the country. It is susceptible of great expansion along sound lines, and your committee particularly recommends it as a community project. Experience in the operation of hospital service insurance or group hospitalization plans has demonstrated that these plans should confine themselves to provision of hospital facilities and should not include any type of medical care.

Your committee recognizes that health needs and means to supply such needs vary throughout the United States. Studies indicate that health needs are not identical in different localities but that they usually depend on local conditions and therefore are primarily local problems. Your committee therefore encourages county or district medical societies, with the approval of the state medical society of which each is a component part, to develop appropriate means to meet their local requirements.

In addition to insurance for hospitalization we believe it is practicable to develop cash indemnity insurance plans to cover, in whole or in part, the costs of emergency or prolonged illness. Agencies set up to provide such insurance should comply with state statutes and regulations to insure their soundness and financial responsibility and have the approval of the county and state medical societies under which they operate.

Your committee is not willing to foster any system of compulsory health insurance. Your committee is convinced that it is a complicated, bureaucratic system which has no place in a democratic state. It would undoubtedly set up a far reaching tax system with great increase in the cost of government. That it would lend itself to political control and manipulation there is no doubt.

Your committee recognizes the soundness of the principles of workmen's compensation laws and recommends the expansion of such legislation to provide for meeting the costs of illness sustained as a result of employment in industry.

Your committee repeats its conviction that voluntary indemnity insurance may assist many income groups to



finance their sickness costs without subsidy. Further development of group hospitalization and establishment of insurance plans on the indemnity principle to cover the cost of illness will assist in solution of these problems.

5. Under Recommendation V on Insurance Against Loss of Wages During Sickness: In essence, the recommendation deals with compensation of loss of wages during sickness. Your committee unreservedly endorses this principle as it has distinct influence toward recovery and tends to reduce permanent disability. It is, however, in the interest of good medical care that the attending physician be relieved of the duty of certification of illness and of recovery, which function should be performed by a qualified medical employee of the disbursing agency.

6. To facilitate the accomplishment of these objectives, your committee recommends that a committee of not more than seven physicians representative of the practicing profession, under the chairmanship of Dr. Irvin Abell, President of the American Medical Association, be appointed by the Speaker to confer and consult with the proper federal representatives relative to the proposed National Health Program.

The addresses of the officers of the Association were briefly reviewed in the report of the Reference Committee on Reports of Officers and Board of Trustees. The portion of the Committee's report dealing with these addresses follows:

1. The Address of the Speaker: After narrating the difficulties which have beset the profession during the last few years, the Speaker points out the responsibilities of this House of Delegates. Your committee commends him for accentuating the importance of the House of Delegates as a forum to which every medical problem may be presented with the assurance of its calm consideration and wise disposition. He reiterates the fundamental importance of the ten principles or commandments already established in the consideration of any question involving the distribution of medical care.

2. The Address of the President: Seldom is it the privilege of our deliberative assemblies to have presented to them so clear and convincing an exposition of principles related to the subjects under discussion and couched in such scholarly diction.

The President's defense of the traditional ethics of the profession serves again to emphasize how basic they are in the maintenance of our professional standards, and his concern that all plans be measured in terms of results in morbidity and mortality indicates the principal criterion which should be applied.

He points to the indefiniteness of the National Health Program and the absence of opportunity for the presentation of alternative proposals or the detailed discussion of any part of the plan, the one agreement being the need for a Cabinet office of health and medical service. Your committee commends his clear definition of the relation between the physician and the indigent and between the physician and the mutual benefit institution and the maintenance of the right of the physician to determine the conditions of his service. Above all your committee firmly supports his refutation of the radical speakers' charges that we oppose changes from the desire for more and more money, which he characterized as "an outrageous misstatement of our attitude."

He forcibly presents the fundamental tenet, applicable to the problems now before this body, opposing: (1) the disposal of professional services under conditions preventing adequate service, and the disposal of professional services to the financial profit of lay bodies, as being against sound public policy; (2) all meddling in medical economics consisting of vague plans for the indigent and quasi-indigent; (3) making the distribution of medical services a political football. He favors: (1) Plans now carried on under the auspices of component medical societies, provided these plans are in accord with the principles and policies adopted by the American Medical Association, with a view of securing wider distribution of medical service; (2) group hospital in-

surance with proper safeguards to the physician and the patient; (3) suitable care for the indigent by municipal, county, state and federal institutions; (4) the principle of insurance when nonpolitically managed and when the funds are not dissipated among employees of the organization not directly concerned with rendering the service.

3. After commenting on the mutual confidence and respect engendered in the physician-patient relation, the President discusses the unfair picture painted by speakers at the National Health Conference. They depicted us as a nation one third ill fed, housed and cared for in health, dying in numbers for lack of our services. Factual knowledge to check on such statements is now in process of accumulation. Physicians everywhere are urged to return promptly the questionnaire prepared by the American Medical Association. Only by the evidence so obtained can your officers be in a position to establish the actual facts. Finally, the President again calls attention to the fact that the long established principles and policies of the American Medical Association do not preclude expansion of medical care to the mass of the underprivileged when their status is so established.

4. The Address of the President-Elect: Our President-Elect in his brief but sententious address uses no uncertain terms in dealing with recent widespread unfair criticism of the medical profession. He is to be recommended for the straightforward manner in which he attacks the hostile program apparently emanating from unfriendly sources. He details a few of the numerous sacrifices which are continually being made by the medical profession without thought for recompense and which are apparently overlooked by carping critics.

Not only does he call attention to economic insufficiency as a common cause of ill health but he refutes a favorite argument that widespread unemployment is based on lack of medical needs. He calls attention to the fact that the medical profession is voluntarily responsible for the social elements of the healing arts. He cites our medical publications as examples of the devotion to scientific medicine and devoid of selfish interest. In fact, he states that "never at any time, in any way, have our activities been motivated by selfish purposes." On the eve of this epoch-making session of the House of Delegates he points out that the one interest of this body is whether the proposals will contribute to the prevention of disease, prolongation of life and the alleviation of suffering, and he urges us to oppose doctrines which would eventually lower the standards of medical service. He emphasizes the fact that no one plan can meet the needs of every section of the country and makes it plain that no plan can be successful without the wholehearted cooperation of the medical profession. He ends with the warning that it is our plain duty to see that the structure of American medicine is not wrecked.

5. Report of the Board of Trustees: Attention is directed to the fact that this is the third time in history that the House of Delegates has been called to a special session. The report described the circumstances under which the National Health Conference at Washington in July was held. It was intimated that the proposals resulting from this conference will be the basis for presenting legislation to the next Congress importantly affecting medical practice. The chairman of the Board calls attention to the responsibility placed on the members of this House of Delegates since we must formulate a policy for immediate needs as well as future exigencies.

Your reference committee highly commends the Board of Trustees for its willingness to submit to investigation by any authorized agency on the nature of its organization, work, conduct and activity. Firm in a belief in the probity of our officers, and confident of their adherence to established federal law, your reference committee recommends that, in the event of an indictment, this House of Delegates give full support to the Board of Trustees in defending such litigation to the utmost, with every means in its power, exhausting, if necessary, the last recourse of distinguished legal talent, to establish the ultimate right of organized medicine to use its dis-

ciplines to oppose types of contract practice damaging to the health of the public.

6. Your committee has studied with interest the action of the Board of Trustees in the matter of the Social Security Act and heartily commends the action of the Board. It recommends that this House of Delegates assure the trustees of their full support in all efforts to establish the position of the American Medical Association as a scientific and educational organization.

The Speaker of the House appointed reference committees on the following subjects: (1) To Consider Recommendation No. 1 on Expansion of Public Health Services, (2) To Consider Recommendation No. 2 on Expansion of Hospital Facilities, (3) To Consider Recommendation No. 3 on Medical Care for the Medically Needy, (4) To Consider Recommendation No. 4 on a General Program of Medical Care, (5) To Consider Recommendation No. 5 on Insurance Against Loss of Wages During Sickness, and on Reports of Officers and Board of Trustees and on Miscellaneous Affairs. Chairmen of the first five committees served as a Reference Committee on Consideration of the National Health Program. The report of each committee was presented to the House and discussed before being referred to the Committee on Consideration of the National Health Program.

Plans or resolutions on medical care were presented by delegates from a number of states, among them the Missouri plan presented by Dr. Carl F. Vohs, St. Louis, as follows:

It is a little over four years ago that the Missouri State Medical Association began to study the sociohealth movement in this country and the accomplishments of such movements in European countries.

We came to the conclusion that compulsory health insurance with cash benefits is not a desirable solution to our problems. The one outstanding problem before the medical profession today from the standpoint of the curative treatment of disease is the development of an adequate medical service for all persons at a cost which can be met by them in their respective stations in life. It is in answer to this problem that the Health Security Administration of the State of Missouri is being planned and developed.

Following the survey that is being made of the medical needs, the state is to be divided into economic units. Each unit will support in a coordinated program:

1. A Group Hospitalization Plan.
2. A Medical-Dental Service Bureau.
3. A Central Registration Bureau.

Representatives from the boards of management of each of these bureaus will make up the Health Security Administration of the economic unit. A representative from each Health Security Administration will sit on a state board to be known as the Health Security Administration of the State of Missouri.

It is planned that this Health Security Administration of the State of Missouri will be in control of all plans and monies established by federal grants-in-aid. It will have the right to assist local economic units in the building of needed hospitals and clinics from state and federal funds.

The respective local boards are made up of medical men, dentists, hospital representatives and the public. If we must have a national health program, such an administration could handle it most safely and most sanely and would meet all the requirements of the Technical Committee in its suggestions and plans for a unified system of state health.

We have divided the people into four classes. The upper 25 per cent of the people can pay for all medical, dental and hospital care at all times. The second 25 per cent can with some assistance pay reasonable fees for health care. For this group we have arranged the Medical Dental Service bureau for the postpayment of their medical, dental and hospital bills. These bills are to be liquidated in a year's time. For this group we also have inaugurated group hospitalization which at a cost

of 75 cents per month per individual, \$1.25 per month for husband and wife, and a maximum of \$1.50 a month for any sized family, pays for thirty days a year for each of them in any of our hospitals. If they stay longer than thirty days, one third of the bill for six months is paid. The average stay in the past two years has been 9.7 days.

For the third group of 25 per cent of our population, the two bureaus are of great service. Group hospitalization will take care of their hospital liability, and their medical and dental bills must be scaled down to meet their ability to pay. For the lower strata of this group, which of course varies greatly in number in direct ratio to our depressions and recessions, the third bureau, the Central Registration Bureau, is intended. The patient will pay what little he can for his hospitalization if he is not a member of Group Hospitalization, and the remainder is to be paid out of United Charity Funds at an agreed per diem cost. The medical care after proper investigation of these patients will be given gratis by the medical profession. It is hoped after the indigent load of the community has been definitely established by the Central Registration Bureau to work out a prepayment cash payment plan for medical and dental care for this whole group.

The last group of 25 per cent of our population will always be the responsibility of the community and their care should be paid for on a per diem basis by the United Charities as they are vouched for by the Central Registration Bureau. If the funds of the United Charities are not sufficient to liquidate this liability, then city, state and national tax funds must subsidize the program. This will fit in well with the national health program.

If the medical and dental burden for the care of this group becomes too great, then plans like the Los Angeles County Plan and the Oakland (Mich.) Plan will be instituted. These plans pay for the care, medical, dental, and other, out of tax funds. Again we can use federal grants-in-aid.

We in Missouri feel that this is a "state system" such as is recommended by the National Health Conference and meets the suggestion that "the role of the federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice."

It is a state system establishing and meeting all the needs of all counties in the state; it is voluntary in every aspect and without political control.

A definition of the term "medically indigent" was adopted as follows:

A person is medically indigent when he is unable, in the place in which he resides, through his own resources, to provide himself and his dependents with proper medical, dental, nursing, hospital, pharmaceutical and therapeutic appliance care without depriving himself or his dependents of necessary food, clothing, shelter and similar necessities of life, as determined by the local authority charged with the duty of dispensing relief for the medically indigent.

The following resolution on the expansion of the Bureau of Medical Economics, introduced by Dr. E. H. Skinner, Kansas City, Section on Radiology, was adopted:

WHEREAS, There is a demand among state and county medical associations for help and advice, for surveys and the development of local and state programs for the care of the indigent and low income groups of the people; therefore be it

Resolved, That it is the sentiment of this House of Delegates that it would heartily approve of an action by the Board of Trustees looking toward the sensible expansion of the Bureau of Economics to accommodate the immediate and growing demand.

Dr. James R. McVay, Kansas City, served on the Committee on Credentials and the Reference Committee to Consider Recommendation No. 1 on Expansion of Public Health Services. Dr. E. H. Skinner, Kansas City, Delegate from the Section on Radiology, served on the Reference Committee to consider Recommendation No. 3 on Medical Care for the Medically Needy.



Drs. Carl F. Vohs, St. Louis; James R. McVay, Kansas City; A. R. McComas, Sturgeon, and H. L. Kerr, Crane, Delegates from Missouri; E. H. Skinner, Kansas City, Delegate from the Section on Radiology, and Mr. E. H. Bartlesmeyer, St. Louis, Assistant Secretary, attended the session.

### COUNCIL MEETING

Jefferson City, August 31, 1938  
Abstract of Minutes

The Council of the Missouri State Medical Association met in Jefferson City at the Madison Hotel on August 31, 1938. Dr. Curtis H. Lohr, Clayton, presided. In attendance were Drs. A. S. Bristow, Princeton; H. B. Goodrich, Hannibal; R. B. Denny, Creve Coeur; W. A. Bloom, Fayette; A. J. Campbell, Sedalia; E. P. Heller, Kansas City; H. L. Kerr, Crane; E. C. Bohrer, West Plains; E. J. Nienstedt, Sikeston; B. W. Hays, Jackson, President; J. R. McVay, Kansas City, President-Elect; A. R. McComas, Sturgeon, Chairman of Committee on Health and Public Instruction (McAlester Foundation); Ralph R. Wilson, Kansas City, Chairman of Committee on Maternal Welfare; Carl F. Vohs, St. Louis, Chairman of Committee on Medical Economics; Lee D. Cady, St. Louis, member of Committee on Study of Medical Practice Act, and Mr. E. H. Bartlesmeyer, St. Louis, Assistant Secretary. Guests included Dr. Harry F. Parker, State Health Commissioner, and members of his staff, Drs. John W. Williams and James F. Chapman.

The appointment by President Hays of a special Committee on Conservation of Eyesight authorized at the Jefferson City Session was confirmed as follows: Drs. C. P. Dyer, St. Louis, Chairman (1941); John McLeod, Kansas City (1941); L. R. Forgrave, St. Joseph (1940); Philip S. Luedde, St. Louis (1940); Winfred L. Post, Joplin (1939).

The report of the Treasurer was approved as follows:

August 30, 1938.

#### Status of Funds

General Fund .....	\$ 3,815.77
Defense Fund .....	1,220.76
Legislative Fund .....	2,240.63
Sinking Fund .....	4,269.00
	<hr/>
	\$11,546.16

The appointment of a special committee to consist of five members to conduct a study of the Association's Constitution and By-Laws was approved and the following matters referred to the Council by the House of Delegates (Jefferson City Session) were referred to the Committee:

1. Amendment to Chapter VII, Section 1, of the By-Laws changing the name of the Committee on Maternal Welfare to Committee on Maternal Welfare and Infant Care.

2. Recommendation that the name of the Committee on Control of Syphilis be changed to Committee on Control of Venereal Disease and that the Committee be made a standing committee, and adding a new section (Sec. 14 of Chapter VII of the By-Laws) outlining the duties of the Committee.

3. An amendment to Chapter VII of the By-Laws "unless otherwise provided for in the By-Laws all committees shall consist of five members, two serving for one year, two for two years and one for three years."

The rules and regulations of the Missouri State Highway Commission relative to payment of hospital and medical expense for employees disabled in line of duty, established in accordance with recommendations of the Committee on Medical Economics, were submitted and ordered published in *THE JOURNAL*. (See page 415 of this issue.)

At the request of the Council on Industrial Health of the American Medical Association the establishment of a

special Committee on Industrial Health to consist of five members was approved.

Resolutions outlining the method of election of councilors as provided in Section 2, Article IX of the Constitution were referred to the special Committee on Study of Constitution and By-Laws.

The recommendation that a specified fee be established for immunization was discussed and no action taken. It was the opinion that this was a matter within the discretion of each respective county medical society. It was recommended that each society be encouraged to work out a definite immunization program.

In order to inform the profession thoroughly of State Department of Health programs, the State Health Commissioner was given the privilege of two pages of *THE JOURNAL* each issue for a discussion of the various programs with which the Association is cooperating.

The proposal for the establishment of a State Arthritic Hospital for indigents sponsored by the Clay County Medical Society was referred to the Committee on Medical Education and Hospitals.

Proposed legislation for an annual registration of physicians and a basic science law was referred to the Committee on Public Policy for study and report at the November meeting of the Council.

A resolution regarding antenuptial laws for the control of venereal disease in marriage was adopted provided the principles outlined are subsequently approved jointly by the Committees on Syphilis, Mental Health and Maternal Welfare.

A resolution that the opinion of the Missouri State Bar Association be requested prior to action on a proposed uniform marriage evasion act was adopted.

A resolution presented by the Marion-Ralls County Medical Society suggesting amendment to present laws which would provide appointment of members of the State Board of Health by the Governor from a list of names furnished by the Missouri State Medical Association was approved in principle and referred to the Committee on Public Policy.

A resolution requesting the State Board of Health to sponsor jointly with the Association a Harmful Drug Act was adopted.

A letter from Dr. Olin West, Secretary of the American Medical Association, calling attention to a resolution adopted by the House of Delegates of the American Medical Association at the San Francisco Session stating the desirability of enactment of legislation providing that an additional requirement of full citizenship in the United States be demanded of foreign medical graduates before granting licenses to practice medicine was referred to the Committee on Public Policy for study and report at the November meeting of the Council.

The resolution entitled "Resolution on Cancer Commission, Cancer Committee, etc.," referred to the Council by the House of Delegates was approved in principle to be included as part of the record in the Association's relationship with the Cancer Commission.

A resolution proposing legislation which would place tuberculosis hospitalization, prevention of blindness, prevention and correction of certain deformities and malformations of childhood, control of cancer and hospitalization and all forms of medical relief under the administration of the Department of Health, thus permitting the matching of such funds in order to secure federal grants was approved in principle and referred to the Committee on Public Policy for study and report to the Council at its next meeting. The resolution is published on page 416 of this issue.

Dr. Lee D. Cady, St. Louis, reported that the provisions of the proposed Integrative Medical Practice Act were being studied carefully and a further report would be made at the next meeting of the Council.

Dr. Carl F. Vohs, St. Louis, reported on the activities of the Committee on Medical Economics concerning Group Hospitalization, the Farm Security Administration and the survey of medical and hospital facilities

now being carried on by the Association at the request of the American Medical Association and stated that articles on these topics would appear in THE JOURNAL from time to time for the information of the members.

Dr. Vohs further reported cooperation with the State Social Security Commission of Missouri in the matter of surveys on the medical need of the Commission's aid to dependent children and that approval of experiments to be conducted in three or four counties as a guide toward future participation in the program of medical care for these dependent children, numbering approximately 12,500 at the present time, was desired. The recommendation of the Committee was approved.

Dr. A. R. McComas, Surgeon, Chairman of the Committee on Health and Public Instruction (McAlester Foundation), reported that his Committee would consult with Mr. Lloyd W. King, State Superintendent of Schools, at an early date, concerning the resolution adopted by the House of Delegates at the Jefferson City Session requesting that an accredited course in elementary anatomy and physiology be included in the curricula.

Drs. James R. McVay and H. L. Kerr reported the activities of the Missouri delegates in attendance at the San Francisco Session of the American Medical Association.

A communication from Dr. W. J. Stewart, Columbia, Director, State Crippled Children's Service, requesting approval of an educational program for parents of crippled children that many congenital deformities can be benefited by early treatment, and physicians as to the type of treatment, was referred to the Committee on Health and Public Instruction for their approval or modification in its discretion.

The resignations of Drs. J. F. Harrison, Mexico; W. E. Breuer, St. James, and James W. Allee, Eldon, as members of the Committee on Public Policy, were accepted. The resignation of Dr. W. E. Breuer as a member of the Committee to Study the Medical Practice Act was accepted. The secretary was instructed to write a letter thanking them for their splendid service to the Association.

On recommendation of Dr. Goodrich, Clark, Lewis and Scotland county medical societies were hyphenated.

The Council approved the appointment of a Committee on Cancer by each county medical society to cooperate with the State Cancer Commission in the matter of eligibility of patients for admission to the State Cancer Hospital when erected.

Acting upon the request of Dr. E. J. Goodwin, Secretary-Editor, to be relieved of the active responsibilities of his office, Dr. Goodwin was elected Secretary-Editor Emeritus for life.

The Chairman was authorized to appoint a committee of three members of the Council to work out a plan of organization and report to the Council at its next meeting. The Assistant Secretary, Mr. E. H. Bartelsmeyer, was instructed to carry on the responsibilities of the office.

## HOSPITAL AND MEDICAL EXPENSES OF STATE HIGHWAY EMPLOYEES

The Missouri State Highway Department, through a representative at the meeting of the Council on November 23, 1937, asked cooperation of the Association in providing medical services to construction and maintenance employees of the Highway Department temporarily disabled in line of duty. The money for this work was made available by the bill appropriating funds for the State Highway Department for 1937-1938. The Highway Department suggested that the Association approve a schedule of fees. The matter was referred to the Committee on Medical Economics which met with representatives of the Highway Department with a view of working out satisfactory arrangements, particularly ar-

rangements with no fee schedule or limited choice of physicians. Following are the "General Rules and Regulations of the State Highway Commission of Missouri Regarding Payment of Hospital and Medical Expenses of Employees," approved June 18, 1938.

For the purpose of carrying out the provisions of the item "hospital expenses and medical service for construction and maintenance employees temporarily disabled in line of duty" in the bill appropriating funds for the State Highway Department for 1937-1938, the following rules and regulations, canceling and superceding all previous rules and regulations relating to this matter, are hereby established:

### Rule 1. General Definitions

The provisions of the act are applicable only to (1) hospital expenses and medical service (2) of construction and maintenance employees (3) temporarily disabled (4) in line of duty (5) incurred between midnight December 31, 1936, and midnight December 31, 1938. The act does not provide for payment of (a) compensation to such injured employees, or (b) for hospital expense and medical services for employees temporarily disabled either because of sickness or disease only, or because of injury not sustained in line of duty, or because of sickness or disease resulting from injuries not sustained in line of duty.

The following terms as used in these rules and regulations shall mean: "Hospital expenses": Hospital service including food, nursing, medical and surgical supplies, ambulance, crutches and apparatus necessary to relieve and cure the injured employee. "Medical Service": The professional services of a licensed physician or surgeon, including operations, x-ray, dressings, anesthetics, antiseptic treatments and after-care. "Construction and maintenance employees" or "employees": All full time, part time or day laborer employees regularly engaged in construction and maintenance work, including supervision, survey, shop and garage, laboratory, and materials inspection employees; the term does not include any employee whose duties are solely administrative or are not directly connected with construction and maintenance. "Temporarily disabled": Unable to perform usual, regular and customary duties; such temporary disability may be either partial or total. "Line of duty": Performance of the usual, regular and customary duties of the employee. "Injury": A bodily one of violence to the physical structure of the body, arising from violent, accidental and external means, and such disease and infection as naturally result therefrom, but not one arising out of a sickness or disease.

### Rule 2. Procedure

Every employee who has sustained an injury in line of duty, and who expects to make a claim for hospital expenses and medical service incurred by reason thereof, shall immediately file with his immediate superior a short, simple statement setting forth the date, hour, place and manner of occurrence of the accident, the nature of the injury and the names and addresses of witnesses, if any, and also the agreement of reimbursement set out in rule 7 hereof, if applicable. After the conclusion of the temporary disability and the completion of the medical or hospital service, the claimant shall file with his immediate superior: (1) A short statement of the physician showing the nature of the injury, the method and times of treatment and the day claimant was able to resume work; and (2) one original and two duplicate copies of the bill or statement of account of the physician or hospital, each fully itemized. If the claimant has paid all or any part of the bill, the physician or hospital manager should show such fact upon the statement of account.

The immediate superior shall forward all of the foregoing, as soon as received, to the division engineer together with any additional, conflicting or substantiating data known to such superior. The division engineer shall investigate the claim and forward it, with his recommendation, to the chief engineer through the following channels: (a) The head of the bureau in which the employee was employed at the time of injury; (b) the safety engineer; and (c) the chief counsel, each of whom respectively shall note his approval thereon. Where the division engineer approves the claim, he shall, before forwarding it to the Bureau head, attach to it a proper payroll.

In case of disapproval or modification, the division engineer, bureau head, safety engineer or chief counsel, as the case may be, shall notify claimant of such fact and the reasons therefor and on application of the claimant he shall be given an opportunity to be heard by the chief engineer. In the event the chief engineer rejects the claim, the claimant may appeal to the Commission for a final ruling thereon.

Upon the final approval of the claim, the auditor of the Department shall cause payment to be made, to claimant in any case of reimbursement or to the physician or hospital direct in the event claimant has not previously paid such bill.

### Rule 3. Medical Fees

Except in unusual circumstances and upon recommendation of the division engineer, all of the bills of the employee arising out of an accident must be paid at one time and upon one payroll. In the ordinary case this will be only after the employee has fully recovered and has returned to work.

All fees charged must be reasonable and shall not exceed those customarily charged for the services rendered. Fees shall include ordinary drugs, dressings, anesthetics and antiseptic



treatments, unless the proof on file clearly shows that an excessive amount of material had to be used, in which case the excess will be paid for at cost. Fees for daily dressings of minor injury will not be allowed unless the proof on file clearly shows the necessity for same. Where flat fees are charged no additional charge for visits, dressings or treatments will be approved. Where flat fees are not charged, bills must be itemized showing the date of each visit, dressing, treatment or operation and the charge for such service.

Fees will not be approved for the services of more than one attending physician over the same period of time. This, however, does not apply to surgeons, consultants, anesthetists, assistants, ophthalmologists, dentists or physicians specializing in eye, ear, nose and throat practice, where the proof on file clearly indicates the necessity for such service. In the event one physician renders first aid and the employee subsequently goes to another physician for completion of treatment and after care, reimbursement will be authorized in accordance with the services rendered by each physician.

In major cases such as fracture, dislocation or major surgical operations, the fees include all routine aftercare. The physician should report to the division engineer by telephone or telegraph all major cases or those requiring hospitalization.

Reimbursement for fees covering services rendered by an assistant or anesthetist will not be made unless such person is qualified to render such service. Medical, surgical and anesthetic fees will be paid to licensed physicians only. Reimbursement for fees of consultants, assistants or qualified anesthetists will be made only when it is clear from the proof on file that from the nature and extent of the injury such services were necessary. Reimbursement for physical therapy or other electrical treatment will not be made unless specifically authorized by the chief engineer.

#### Rule 4. Hospital Services and Fees

Reimbursement for hospital expenses (other than expenses of "out patients") will be made only when the proof on file clearly shows the necessity for hospitalization, and then only for the actual time the employee is necessarily confined to the hospital. Reimbursement will be made only upon the basis of the ward rate, and without special nursing, unless the proof on file clearly shows that the employee is so severely injured that quiet surroundings and special service is necessary and have been ordered by the attending physician, in which case reimbursement will be made on the basis of the private room rate and special nursing. No reimbursement will be made for hospital service after the time it is evident that, considering the nature of the injury, the condition of the employee, and the kind and character of treatment subsequently necessary, the employee can be discharged and returned to his home for convalescence, or is ambulatory and able to go to the physician's office or to the hospital for treatment or dressings.

No reimbursement for hospital expenses, including those incurred by "out patients" under the direction of the attending physician or surgeon, will be made in excess of the hospital's established and customary charges for such service.

Bills for hospital service must be submitted separately from those for medical or surgical services, and must be fully itemized. Hospital bills will not be approved until the employee is discharged from the hospital, except that the Chief Engineer may, in cases involving hospital treatment lasting more than one month, authorize payment of hospital bills monthly.

#### Rule 5. Dental Work

Reimbursement for dental work made necessary by accident (except for such first aid rendered by a dental surgeon as may be necessary to the possible preservation of the normal function of injured employee's natural teeth), will not be made unless agreed upon by the employee and the Chief Engineer before the bill is contracted, or the work done.

#### Rule 6. Miscellaneous

The employee shall select his own physician or surgeon if conveniently located, except in emergencies when the employee is unconscious or where immediate medical or surgical attention is necessary. It shall be the duty of the employee to notify his physician or surgeon that reimbursement for medical or hospital expenses will be made only under these rules and regulations.

The employee must follow the directions of his physician or surgeon and comply with all reasonable requests during the time he is under observation and treatment.

The claim of no employee will be approved in the event the proof on file shows that the injury sustained by such employee was incurred in the performance of, or the failure to perform, any act in violation of the safety rules and regulations issued by this Commission.

In any case of serious eye injury where there is likelihood of complications, the employee must secure the services of a surgeon qualified for such special service. And in any case of puncture wounds where the possibility of tetanus infection exists, the employee must insist that the proper preventive antitoxin be administered at once.

Reimbursement will be made only for services actually rendered by persons qualified to render such service. No fees whatever will be paid to any injured employee, except as reimbursement for payments actually made to such qualified persons by the injured employee.

In claims involving injury to more than one part of the

body, care shall be taken that all injuries are reported, even those that appear trivial. In amputation cases the surgeon must accurately describe the amputation in the written report.

Hernia. No reimbursement will be made for services rendered in treatment of hernia.

#### Rule 7. Legal Rights and Reimbursement

In case the employee has been injured in line of duty through the act, omission or alleged negligence of some third person, not another employee of the Department, the employee himself must determine whether or not he will file suit against such third person. Under no circumstances will the Commission or its attorneys advise the employee regarding the liability of the third person, or represent the employee in such suit. However, the employee must notify the Commission of any suit filed.

The claimant's notice of injury in all cases involving such third persons shall specifically contain the following agreement of reimbursement:

"In consideration of the payment by the Commission of hospital and medical expenses incurred by me as a result of the accident and the injuries herein described, I hereby agree with the Commission that, in the event I receive or recover from any other person involved in such accident (or the insurer of such other person) any money or compensation or damages in settlement of liability arising out of such accident, I will pay to and reimburse the Commission, to the extent of such receipt or recovery, the amounts of such hospital and medical expenses."

This reimbursement agreement should be a part of the claimant's notice of injury only where the claimant has been injured through the negligence of some one not another employee of the Department.

#### Rule 8. Accident Insurance

Employees who carry health and accident insurance will be entitled to the same benefits under these rules and regulations as employees who do not purchase and pay for such insurance.

A report made by the Chairman of the Committee on Medical Economics to the Council on August 31, 1938, showed that \$3,309.18 has been paid by the Highway Department in fifty cases. In five cases the payments exceeded \$200. In approximately 50 per cent of the cases the payments amounted to \$20 or less and in 40 per cent to \$10 or less. The injuries attended have been three injuries of the back, one dental, four of the arm, two of the foot, eleven of the leg, two of chest, seven of eye, three of shoulder, seven of hand, one of ivy poisoning, two burns and one of the head.

The Highway Department states that the plan has worked satisfactorily.

### RESOLUTION ON FEDERAL GRANTS

The resolution proposing legislation to facilitate securing of federal grants, adopted by the Council at the meeting in Jefferson City, August 31, and referred to the Committee on Public Policy for study and report, follows:

WHEREAS, The next session of the Legislature which convenes on January 1, 1939, will be a revision session in which certain statutes relating to the public health should be changed, modified or repealed in order to bring them up-to-date so that they will more nearly reflect the modern conception of public health principles and practice, and

WHEREAS, It has come to the attention of the Council of the Missouri State Medical Association that at least five public health activities in the State of Missouri are being administered by five different agencies which have no correlation with each other or with the State Department of Health, and

WHEREAS, These activities unquestionably affect the public health and should properly be administered and controlled by the State Department of Health, and

WHEREAS, These separate and incoordinated boards and commissions frequently overlap in their activities causing duplication of effort and increase of the cost of administration, and

WHEREAS, These five public health activities cost more than \$1,000,000 in tax funds each biennium for their present support which sum is expended outside of the budget of the State Department of Health and therefore cannot be utilized as a basis for securing federal grants of money which are now or may be available later to the State of Missouri through its official health agency, the State Department of Health, therefore be it

Resolved, That legislation be fostered to place (1) tuberculosis hospitalization, (2) prevention of blindness, (3) prevention and correction of certain deformities and malformations of childhood, (4) cancer control and hospitalization, and (5) all forms of medical relief under the administration, supervision and control of the State Health Department where unnecessary duplication of effort and expenditure of funds may be avoided and where such funds as are now being expended for the above named activities may be utilized as matching

funds to secure federal grants to which the State of Missouri is entitled and which other states are now receiving.

Approximate costs of four health activities not under supervision of the State Health Department, based on gross appropriation, 1937-1938, follow:

(1) Tuberculosis hospitalization and control .....	\$ 835,980
Mount Vernon Sanatorium .....	
(2) Blind Commission .....	315,595
(3) Crippled Children .....	100,000
(4) Cancer Control and hospitalization .....	100,000
TOTAL .....	\$1,351,575

### CANCER SURVEY TO BE MADE

With the approval of the Association's Committee on Cancer, the State Cancer Commission will conduct a special study of cancer mortality statistics and their correlation with the facilities for treatment. Several years ago Dr. Frank Rector, Field Representative of the American Society for the Control of Cancer, conducted such a study at the request of the Missouri State Medical Association. It is the purpose of the present study to bring this information on the subject up-to-date.

The State Cancer Commission has employed Mr. J. Bertram Black, St. Louis, to make the survey. Mr. Black has a Master's degree in sociology from Washington University and has made special studies of cancer problems. Members of the Association are requested to cooperate with Mr. Black to the fullest extent possible.

### COMMITTEE ON FRACTURES

The recommendation of the Committee on Fractures (adopted by the House of Delegates at the Jefferson City Session) that county societies be urged to devote one meeting each year to the consideration of fractures is called to the attention of the component societies. The Committee on Fractures, in cooperation with the Post-graduate Committee, will provide speakers on this topic. It is suggested, however, in the arrangements of such meetings, in order to provide a good attendance, that several of the smaller adjoining county medical societies hold such a meeting jointly. Requests for speakers on "Fractures" should be addressed to the Headquarters Office of the Association.

### COMMITTEE ON CONSERVATION OF EYESIGHT

The organization of the Committee on Conservation of Eyesight of the State Association has progressed rapidly during the summer. Some twenty or thirty county societies have appointed auxiliary committees to cooperate with the State Committee. Other presidents of component societies are expecting to appoint county committees as soon as fall meetings are held. Dr. W. L. Post, Joplin, has practically completed organization of the Eighth and Ninth Councilor Districts, and Dr. C. P. Dyer, St. Louis, has organized half of the counties in the Fourth and Fifth Districts. Dr. Dyer, Chairman, planned an exhibit which was shown for the first time at the Mississippi Valley Medical Society at Hannibal on September 28, 29 and 30. Several interesting films on conservation of eyesight were shown each day during the meeting to physicians from Missouri, Iowa and Illinois. A radio talk on "The Eyes of Your Child" was given by Dr. Dyer over station WTAD at Hannibal during the convention. The full cooperation of the National Society for the Prevention of Blindness, the Missouri Commission for the Blind and the St. Louis Society for the Blind has been obtained by the Committee in furthering this work among physicians and the public. Every county society is urged to appoint an auxiliary committee and cooperate with the State Committee.

### THE STATE BOARD OF HEALTH OF MISSOURI

Five cases of Rocky Mountain fever were reported to the State Health Department during a six weeks period in August and September. One fatality was reported in St. Louis although it is probable that this case originated in St. Clair County. Two cases were reported from Cape Girardeau, one from Jackson County and one from Clark County. Two of these cases were disclosed in routine tests of specimens sent in to the State Laboratory. Rocky Mountain fever is most prevalent in the western states. The last case previously reported in Missouri was in 1933.

The State Health Department wishes to call the attention of all physicians to the inadequacy of reporting communicable diseases in the state as a whole. While there has been some increase in reporting venereal diseases in the last year, the reporting of other communicable diseases has remained stationary or suffered a slight decrease. An adequate public health program cannot be formulated by the State Department unless private physicians, through proper reporting, furnish an index of public health needs. The medical profession must provide the means whereby the state can assist them in communicable disease control. Please report promptly, regularly and accurately.

The Division of Child Hygiene recently published a series of twelve postnatal letters which now are available without any charge. For some time prenatal letters have been distributed but this is the first attempt to furnish advice through the first year of the infant's life. These letters are designed to supplement the physician's advice to the mother. They are written simply and personally and signed by Dr. James W. Chapman, Director of the Division of Child Hygiene. Mothers may enroll for these letters and physicians are invited to put their patients on the mailing list for them. A sample set of the letters will be sent to physicians upon request.

Response to the lectures to lay groups on maternal and child care has been rather disappointing. Since the first of July Dr. Paul F. Fletcher, obstetrician, and Dr. O. F. Bradford, pediatrician, have been giving lectures to lay groups and providing clinical conferences for physicians. This program was designed and sponsored by the Child Hygiene Division of the State Health Department, the Missouri State Medical Association and the Extension Division of the University, all working together. The Health Department provides the two specialists and arranges the schedule. County medical societies and home demonstration agents were to promote the meetings and the 1700 Home Makers Clubs were to furnish the bulk of the audience. A few of the meetings have been entirely unattended and some audiences have been too small to justify the time and expense. With the declining birth rate in Missouri and in the United States as a whole, there is obvious need for better care of mothers and infants. This program is designed to interest mothers in more adequate medical care and therefore is intended to send them into their family physician's office. The success of the program in many counties indicates that it is worth while. It is scheduled to continue throughout the year if the local societies will cooperate. Otherwise, these funds will better be spent on some other activity. Will you discuss it with your county medical society?

The State Board of Health was offered space in *THE JOURNAL* by the Council to inform physicians of the work of the Board. Material appearing in this column is supplied by the State Board of Health.



Physicians throughout the state will be interested in knowing that a dental public health program has been inaugurated and early results are most gratifying. Dr. A. O. Gruebbel, formerly of Lexington, has been assigned as director of the work. He recently spent a year at Johns Hopkins University in preparation for the job and is ably qualified to conduct this program. He is assisted by Dr. A. E. Murphy who is widely experienced in dental education. Missouri dentists recently expressed their wish for refresher conferences in children's dentistry and the first activity of the dental unit was to provide a series of seven clinical conferences in children's dentistry, conducted by Dr. Walter T. McFall, Nashville, Tennessee, specialist in the field. These conferences were well attended and enthusiastically received. The entire dental program is built around the local dentist and the Missouri State Dental Association is cooperating in every way.

Fifteen per cent of Missouri's births are not registered, according to the most recent report of the Bureau of Vital Statistics. It means that 15 per cent of Missouri's children are handicapped because there is no official record of their births. Social Security legislation now requires birth certificates for aid to dependent children as well as old age pensions and it is, therefore, more than ever before the duty of physicians to report all births.

Many birth certificates come to the State Department written illegibly and only partially complete. Your patients and your Health Department will appreciate it if you will write legibly, provide all the information requested on the form and report all births promptly. It will be well for physicians to inspect their records and send in birth certificates for those births not reported to date. Here is another public health activity that is dependent upon the cooperation of the medical profession.

## MISCELLANY

### ELLIS FISCHEL CANCER HOSPITAL FOR INDIGENTS

Plans for the Ellis Fischel Cancer Hospital for Indigents have been accepted by the Cancer Commission. Jamieson and Spearl, St. Louis, are the architects. Bids for the building contract were to be in the hands of the state purchasing agent on September 20 and the contract to be let and the construction started immediately.

The hospital was made possible through an appropriation of \$500,000 by the Legislature in 1937. Later \$409,090 was granted the Cancer Commission by the Public Works Administration, making a total of \$909,090 for the construction and equipment of the hospital. The hospital is to be located on a forty acre tract of land on Highway 40 in Columbia. This land was given by Columbia to the Cancer Commission.

The building will consist of seven stories and a penthouse with an approximate bed capacity of eighty-three. There will be a large clinic to handle ambulatory cases. The ground floor will include the deep therapy and radium department, service rooms, boiler rooms, kitchen and laundries. The first floor will be devoted to clinic and administration offices, and the second, third and fourth floors to bed patients. The fifth floor will be for resident and visiting physicians, a museum, library and scientific research rooms. The sixth floor will include operating rooms and diagnostic roentgen ray rooms, and the seventh floor, laboratories and scientific activities of the Cancer Commission. The penthouse will house elevators and water tanks. The building will be modern in design, constructed of brown and cream colored brick.

The office of the Cancer Commission is located at 3713 Washington Boulevard, St. Louis. The chairman is Mr. F. T. Hodgdon, Hannibal.



THE ELLIS FISCHEL CANCER HOSPITAL FOR INDIGENTS. (From architect's drawing.)

## OBITUARY

## RICHARD H. FUHRMANN, M.D.

Dr. Richard H. Fuhrmann, St. Louis, died on December 20, 1937, after a lingering illness. Dr. Fuhrmann was born in St. Louis on June 26, 1880. He received his early education at Smith Academy and entered Washington University School of Medicine in 1899 from which he was graduated in 1903. Immediately after graduation he began special training in obstetrics and gynecology. During the years 1903 and 1904 he was second assistant to Dr. Henry Schwarz and in charge of the obstetrical outpatient service at Washington University School of Medicine.

In 1904, Dr. Fuhrmann became first assistant to Dr. Henry Schwarz, assisting in the teaching of obstetrics and also with Dr. Schwarz's private practice. He was an active teacher with the title of instructor in the Department of Obstetrics and Gynecology from 1905 to 1911 when he resigned to devote most of his time to private practice. Since that time, he has been active on the obstetrical service of the Deaconess Hospital and during the last three years was chief of staff in obstetrics there. For many years Dr. Fuhrmann was interested in teaching obstetrics to nurses. He lectured to groups at the Lutheran, St. Anthony's, St. Mary's and Deaconess hospitals. He was also a member of the Department of Obstetrics at the St. Louis University for several years.

In 1919 Dr. Fuhrmann was married to Miss Martha Miller, St. Louis, who died on February 24, 1927. They had three children, Richard, Junior, now 18 years of age; Mary, 15, and Martha, 12.

Dr. Fuhrmann was active in Masonry, being a member of the Scottish Rite Order, a thirty-third degree Mason and a Shriner.

An excellent obstetrician, Dr. Fuhrmann was known for his keen obstetrical judgment. He was conservative throughout his practice, an attribute which is commendable especially in these last years when so much active interference has developed in obstetrics.

Outside of medicine, Dr. Fuhrmann's chief interest was photography. He maintained his own photographic laboratory in his home and collected a great variety of lantern slides. In 1904 he started the collection of teaching lantern slides for the Department of Obstetrics and Gynecology at Washington University School of Medicine. He was especially efficient at coloring these slides and in the teaching collection of the above department there still remain some seventy-five beautifully colored slides made by Dr. Fuhrmann. Other hobbies were stamp and autograph collecting, Dr. Fuhrmann having had the signatures of many prominent physicians and laymen in his possession.

Dr. Fuhrmann was an unusually modest man, having a kindly nature, and he was a loyal friend. It is these characteristics that made him beloved by all who knew him. His character has been beautifully described in a poem, entitled, "My Tribute," written by his sister, Miss Frances I. Fuhrmann. We mourn his loss.—O. H. S. in the *Weekly Bulletin* of the St. Louis Medical Society.

## FRANK LESTER MAGOON, M.D.

Frank Lester Magoon, St. Louis, was born at Sebec Lake, Maine, on November 3, 1867, and died in St. Louis on January 17, 1938.

At an early age his parents moved from Maine to Clarence, Missouri, where his father, Dr. Ephraim Magoon, practiced medicine for forty years before moving to St. Louis.

Dr. Frank L. Magoon took his medical work at the College of Physicians and Surgeons and at the Missouri

Medical College when those schools represented the best in medicine in St. Louis.

Shortly after his graduation he married Kate Herron from his boyhood home in Clarence. To this home, to add to its happiness, came a son and a daughter, who with Mrs. Magoon, survive.

Early in his medical career Dr. Magoon became interested in insurance work, which he followed the rest of his life, finding the strain of active practice too heavy a burden.

His love for his fellow man prompted him to participate actively in the Masonic order. He served Beacon Lodge No. 2 A. F. & A. M. as secretary for thirty-five years. It was his pride to know the members by name even though the membership was well over a thousand. During his service as secretary and as master the members in trouble often brought their burdens to his door and left with a lighter heart, cheered by the wisdom of his counsel and the brightness of his smile.

For twelve years (1903-1915) this good citizen found time to serve the public as a member and as president of the St. Louis Board of Education. Here he served faithfully and long. In connection with the public school system there is a fund founded by Dr. Ben Blewett to aid and relieve public school teachers who might be in need of assistance. This foundation provided that one of the trustees of this fund be named by the Judge of the Probate Court. From 1923-1932 Dr. Magoon served well and actively as an appointee of this court and added materially to the counsels of this board of trustees. In 1924 Governor Baker appointed Dr. Magoon to the Board of Police Commissioners. Here he served for a period of four years. His former connection and interest in the educational system of the public schools prompted him to great interest in the formation and conduct of the school for the training of the members of our police force. His ambition was that each officer should be well grounded in the duties and responsibilities of being a police officer. He expected the men to be proficient also in the use of firearms. In order to stimulate them to greater endeavors he himself became a marksman as an example for his men to follow.

Frank Magoon was a Christian man interested and active all of his life in the church to which he early attached himself. I am proud to have known and to have been the friend of this physician, public-minded citizen and Christian gentleman since his earliest day in St. Louis.

My friend, Frank Lester Magoon, you have labored long and faithfully. You have entered into a well-earned rest. May you rest in peace until the dawning of the Glorious Resurrection for those who have served their God and their fellow men, as you have done.—F. E. W. in the *Weekly Bulletin* of the St. Louis Medical Society.

While iron has been prescribed for almost three centuries, its therapeutic use is far older than the rational explanation of its action, and opinion concerning its value has changed greatly from time to time. Russell L. Haden, Cleveland (*Journal A. M. A.*, Sept. 17, 1938), reviews the most pertinent clinical literature on the subject. The most recent development in iron therapy has been the renewed emphasis on the greater potency of ferrous salts. While any iron preparation is effective if given in large enough doses, very much less of the ferrous compounds needs to be taken. Thus the two fundamental principles of iron therapy, large doses and the use of a ferrous salt, now generally accepted, only confirm what Blaud, Niemeyer, Immerman, Osler and others thought and practiced. These principles, forgotten by clinicians for many years, have only recently been learned anew. Such rediscoveries emphasize again our debt to the great clinicians of the past.



## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.  
Perry County Medical Society, December 4, 1937.  
Ste. Genevieve County Medical Society, December 14, 1937.  
Camden County Medical Society, January 7, 1938.  
Webster County Medical Society, January 7, 1938.  
Montgomery County Medical Society, January 14, 1938.  
Dent County Medical Society, January 21, 1938.  
Miller County Medical Society, February 8, 1938.  
Moniteau County Medical Society, March 11, 1938.  
Morgan County Medical Society, May 7, 1938.  
Macon County Medical Society, July 30, 1938.  
Pulaski County Medical Society, August 3, 1938.  
Howard County Medical Society, August 5, 1938.

ASSOCIATE EDITORS: COUNCILORS OF THE  
TEN COUNCILOR DISTRICTS

#### FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR

##### Buchanan County Medical Society

The Auxiliary-Society Basket Dinner of the Buchanan County Medical Society was held at the John Wilcox farm on August 3.

The regular order of business was suspended.

Physicians and their families spread their dinner on the green carpet in the beautiful walnut grove and thoroughly enjoyed an evening of fellowship and sociability.  
O. EARL WHITSELL, M.D., Secretary.

#### FIFTH COUNCILOR DISTRICT

W. A. BLOOM, FAYETTE, COUNCILOR

##### Howard County Medical Society

The Howard County Medical Society met at the Lee Hospital, Fayette, on August 12, with the president, Dr. W. B. Kitchen, Glasgow, presiding. All active members of the Society were present. Dr. B. L. Chamberlain, New Franklin, and Dr. Asa Barnes, Higginsville, were visitors.

Following the report of the committee on medical

economics and a general discussion a resolution was adopted setting a uniform fee throughout the county of 50 cents an injection for all group immunizations arranged by the county nurse or the various women's clubs. It was recommended that these immunizations be given in the doctors' offices.

Dr. W. A. Bloom, Fayette, Councilor of the Fifth District, discussed the survey on the Study of Need and Supply of Medical Care. The president appointed Drs. W. R. Hawkins, Glasgow; W. M. Dickerson, Armstrong, and W. J. Shaw, Fayette, members of the economic committee.  
W. J. SHAW, M.D., Secretary.

#### SEVENTH COUNCILOR DISTRICT

E. P. HELLER, KANSAS CITY, COUNCILOR

At the first meeting of the Jackson County Medical Society in 1937 a resolution was presented which projected a three fold plan for progress in Kansas City. The resolution which was passed without opposition proposed (1) a committee to look into the feasibility of using to better advantage the wealth of clinical material in Kansas City for teaching purposes; (2) a committee to investigate the feasibility of installing a business manager or executive secretary for the Society, (3) "a committee to investigate the feasibility of making immediate use of the building fund for purposes within the trust stipulations."

Decided progress has been made in educational programs and since June, 1937, Jackson County Medical Society has known the worth of a full time business manager, executive offices, credit bureau and other adjuncts. August 1938, marked the culmination of the efforts of the third committee when it was announced that a medical library building, with many auxiliary features, was to be erected on Hospital Hill near the Society's meeting place and auditorium. This new building to be erected by city and PWA funds will cover an area 200 by 90 feet and will be furnished by the Jackson County Medical Society. When plans have been drawn and more details are available the Councilor will make them known.

The medical and dental professions and the hospitals of Jackson County, after serious study over a period of many months of hospitalization plans throughout the country, have inaugurated Group Hospital Service, Inc., of Kansas City. This organization, sponsored by the seven participating hospitals and the Jackson County Medical Society, came into being July 17, 1938, when the State of Missouri issued it a pro forma decree charter. The trustees of this organization are nine in number, three representing the hospitals, three the Jackson County Medical Society and three the general public. This body meets once a month to determine the policies and objectives of the organization. None of the trustees receives any remuneration and the employees of Group Hospital Service receive a moderate salary rather than a commission or bonus. This plan has been designed for the benefit of the people of Kansas City and the organizers of this nonprofit corporation have been careful to exclude promoters and outside commercial organizations from its management.

The plan provides for thirty days care a year to each member in a two bed room; also included is the use of the operating room, routine laboratory services, ordinary drugs and medicaments and surgical dressings. Members may have a private room and will be allowed \$4.50 a day toward its cost. Maternity care is acceptable after ten months membership. This includes the delivery room and care of the infant while in the hospital.

The service is offered only to employed groups and not to individuals. Members may include their wives or husbands and children between the ages of 3 months and 18 years. The cost of the service is 75 cents per

month for the employed individual, 50 cents a month for the first dependent and 25 cents a month for all additional dependents, making a total charge of \$1.50 a month for a family of three or more. Dependents pay \$1 for each day of care.

While this plan in Kansas City is young, it has been well accepted by employers and employees alike. During the first month of operation 3700 persons were enrolled. While no conclusions can be drawn from one month's experience it is encouraging to know that the plan is being so well received.

Another month has passed and the Medical Business Bureau reports an increase in the total of collections for the month. Not only is it significant that the Bureau has been successful in obtaining an increase in the amount of the accounts collected each month, but it is more significant that members of the Jackson County Medical Society have reported numerous instances of patients having requested arrangements with their physicians for payment of accounts in order that their names would not be reported to the Bureau as persons abusing medical credit. It would only be reasonable to believe that since approximately 5000 persons have been contacted by the bureau, many persons have learned of its existence by word of mouth advertising and it has prompted them to arrange payment of unpaid medical accounts direct to their physicians. That is the result which was desired when the Bureau was organized and it will create a greater response to the statements from the physician's office if more accounts are referred to the Bureau for collection and more persons learn of its existence; and also if patients are informed that unpaid accounts will be referred to the Bureau for collection and a credit record made if the accounts do not receive prompt attention. Several members are now using the bookkeeping and accounting service of the Bureau which establishes an accurate control over the patient's account, cash receipts and disbursements and supplies a monthly comparative statement of income and expense.

The survey conducted by the American Medical Association on the Need and Supply of Medical Care has been completed in Jackson County with returns having been received from 575 physicians and dentists, the hospitals and clinics, the City and County Health Departments and the Board of Education of both Kansas City and Independence. A summary of the information received indicates quite strongly that adequate attention and hospitalization is available for indigents within the city proper. The survey also indicates, however, that the situation in the county at large needs strengthening, particularly from the hospitalization angle.

## NINTH COUNCILOR DISTRICT

ELDON C. BOHRER, WEST PLAINS, COUNCILOR

### South Central Counties Medical Society

The South Central Counties Medical Society met at the Horton Hotel, Willow Springs, August 25, for noon dinner with the following members and guests present: Drs. J. L. Johnston, Anderson Nettleship and C. T. Jessell, Springfield; A. H. Thornburgh, West Plains; R. M. Morman, Ava; R. A. Ryan and A. C. Ames, Mountain Grove.

Dr. Johnston spoke on "Allergy," stressing the similarity of the allergic diseases, the difference in symptoms being due only to the difference in the parts involved, as the bronchial mucous membrane in asthma, the nasal mucous membrane in hay fever, the skin in urticaria and some other parts in less clearly defined conditions.

Dr. Nettleship spoke on "Hypertension" emphasizing that this is not a disease but a symptom although one cannot always find or remove the cause. He expressed the conviction that the systolic pressure is not so much an index of the seriousness as is the diastolic pressure.

Dr. Jessell spoke briefly on some experimental work he is doing with oxygen and helium inhalations. He feels there are some advantages in the use of helium.

It was voted to have the next meeting in Mountain Grove late in September and the subject for discussion to be "State Medicine."

A. C. AMES, M.D., Secretary.

## TENTH COUNCILOR DISTRICT

E. J. NIENSTEDT, SIKESTON, COUNCILOR

### Cape Girardeau County Medical Society

The Cape Girardeau County Medical Society, after a recess during the summer, convened at the Colonial Tavern, Cape Girardeau, on September 12.

In the absence of Dr. D. H. Hope, the president, Dr. P. B. Nussbaum, vice president, occupied the chair. Other members present were Drs. D. B. Elrod, Frank Hall, C. T. Herbert, Glenn J. Tygett and C. A. W. Zimmermann, Cape Girardeau; A. M. Estes and Rusby Seabaugh, Jackson.

The secretary read a copy of a letter he wrote at the instruction of the Society concerning the encroachment of Dr. E. M. Bryan, public health officer, into the field of private practice by proposing to give vaccinations against smallpox for 10 cents and immunizations against diphtheria for 30 cents. This letter had been delivered to Dr. Bryan and another letter sent to Dr. E. J. Nienstedt, Sikeston, Councilor. The latter in turn had advised other county secretaries and had received a reply from the Perry County Medical Society. The Society approved the letter sent by the secretary to Dr. Bryan.

A report of the committee appointed to study the "Mother's Health Finance Bill to Finance Motherhood and Health" follows:

There has been referred to your committee on medical economics a copy of a proposed "Mothers Health Finance Bill." This bill which it is proposed to introduce in the Federal Congress is sponsored by the National Association of Mothers Administration Facilities with headquarters in St. Louis. Accompanying the copy of the bill is a wealth of explanatory literature which has been studied by your committee.

The bill in substance provides long term loans (when backed by sufficient collateral) "to mothers and the public generally" to provide for maternity, medical and dental care. Enclosed also with the bill and the literature are plans for an enrollment campaign in which it is proposed to enroll ten million members at one dollar; but the sponsors state that smaller sums will be accepted.

After careful study your committee concludes that this proposed piece of legislation is unnecessary, that it will further entangle the government in the problem of medical care and does not merit our endorsement. The committee recommends that the Society go on record as opposing this movement.

The scientific program consisted of case reports.

Dr. C. T. Herbert, Cape Girardeau, reported a case of Rocky Mountain spotted fever in a girl of 11 years and a case of typhus fever in a girl of 4 years.

Dr. Rusby Seabaugh, Jackson, reported an atypical case of typhoid fever. There were numerous chills and at intervals the temperature fell to normal. Postmortem examination showed extensive ulceration in the ileum with numerous colonic ulcers.

Dr. Frank Hall, Cape Girardeau, reported a case of pyloric obstruction. The patient has recovered after a posterior gastrojejunostomy. Examination of the mass about the pylorus resulted in the conclusion that an old ulcer with perigastritis and not carcinoma was the cause. The mass was not removed.

During a half hour over refreshments the possible actions of the delegates at the called meeting of the American Medical Association were discussed. State medicine found no sympathizers.

C. A. W. ZIMMERMANN, M.D., Secretary.



## WOMAN'S AUXILIARY

### WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

17th Annual Meeting, St. Louis

President, Mrs. C. C. Tomlinson, Omaha, Nebraska.

President-Elect, Mrs. Rolla K. Packard, Chicago.

### WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

15th Annual Meeting, Excelsior Springs

President, Mrs. Herbert L. Mantz, Kansas City.

President-Elect, Mrs. Paul F. Cole, Springfield.

The Cass County Medical Society and the Woman's Auxiliary enjoyed a dinner at Belton and heard a lecture by Dr. Ralph R. Coffey, Kansas City. The Auxiliary went to the home of Mrs. R. M. Martin for a business session and to hear an address by the president, Mrs. Herbert L. Mantz, Kansas City. Mrs. F. B. Ellis, Garden City, president of the Cass County Auxiliary, also spoke. Mrs. T. W. Adair, Archie, was a guest.

The 26th District held its annual picnic for the doctors and their families in August at Stony Dell Swimming Pool near Arlington, with forty attending.

The Clay County Auxiliary will have Mrs. Herbert L. Mantz as guest speaker at the October meeting.

Fifty-seven attended the annual board meeting held September 20 at Columbia. The subject of the essay contest was chosen as "Highway Hazards." The chairman will attempt to make the essay contest a state rather than local project. Brief reports of the San Francisco Session were given by Mrs. A. W. McAlester, Kansas City; Mrs. Charles W. Thierry, St. Louis, and Mrs. W. H. Goodson, Liberty.

Mrs. David S. Long, Harrisonville, a past president of the Missouri Auxiliary, has been honored by being chosen chairman of the Juniors of the General Federation of Women's Clubs.

The Southwest Clinical Society will meet in Kansas City, October 3, 4, 5 and 6. A feature of the meeting will be two plays, "The Doctor's Dilemma" by Bernard Shaw, and "The Doctor's Debacle," presented by an all star cast of doctors. The social calendar has not yet been issued but the wives of visiting physicians will be entertained with the gracious hospitality of former years.

## BOOK REVIEWS

NEW AND NONOFFICIAL REMEDIES, 1938. Containing descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1938. Pp. 592, LXVI. Chicago: American Medical Association, 1938. Price \$1.50.

In this book the Council on Pharmacy and Chemistry lists and describes the medicinal preparations that it has found acceptable for general use by the medical

profession. A glance at the list of the Council members and the long list of consultants appearing in the first part of the book gives ample warrant for the authority of the Council's selections.

New substances described in this volume are Sulfanilamide and Protamine Zinc Insulin, with the accepted brands. The proved value of these new additions to the physician's armamentarium bids fair to make the past year a milestone in therapeutic progress. The Council is to be congratulated on the promptness with which it evaluated these drugs and established standards for their adequate control. From the first the council warned against using Sulfanilamide in untried combinations. The sad tragedy of the deaths from the rashly introduced Elixir of Sulfanilamide-Massengill starkly emphasizes the value of such a body as the Council to the medical profession and the pharmaceutical manufacturers as well as to the public. Of course this potential value cannot become effective as long as those concerned refuse to follow the Council in the use of new remedies.

Other noteworthy new drugs which appear in New and Nonofficial Remedies, 1938, are Avertin with Amylene Hydrate, Vinethene, Pontocaine Hydrochloride, basal, general and local anesthetics respectively; Novatropine and Syntropan, synthetic mydriatics.

Physicians who wish to know why a given proprietary is not described in New and Nonofficial Remedies will find the "Bibliographical Index to Proprietary and Unofficial Articles Not Included in N. N. R." of much value. In this section (in the back of the book) are given references to published articles dealing with preparations that have not been accepted. These include references to the Reports of the Council, to Reports of the American Medical Association Chemical Laboratory and to articles that have appeared in *The Journal*.

MACLEOD'S PHYSIOLOGY IN MODERN MEDICINE. Edited by Philip Bard, Professor of Physiology, Johns Hopkins University School of Medicine. With the collaboration of Henry C. Bazett, George R. Cowgill, Harry Eagle, Chalmers L. Gemmill, Magnus I. Gregersen, Roy G. Hoskins, J. M. D. Olmsted, Carl F. Schmidt. Eighth edition. St. Louis: The C. V. Mosby Company. 1938. Price \$8.50.

This volume represents the contribution of nine individuals each of whom has carried on experimental work in the phase of the subject with which he deals. This is a definite advantage for the volume of physiological literature is so large and developments so rapid that one man can scarcely expect to keep abreast of the entire field or to be able to evaluate the findings of others. Corresponding to this the book in general shows an agreeable completeness of presentation, both in large phases of the subject and in details of a particular topic. Space is conserved by presenting descriptions of methods and data of secondary importance in fine print. The fifty pages of bibliography include publications of recent date and many references to foreign as well as English literature. The book is readable and a lack of overlapping indicates coordination of effort by the various authors.

The description of the mechanism of labyrinthine function needs amplification and one or two minor corrections.

The section on endocrinology is rather condensed, yet there should be room to include the names of the men first isolating theelin and progesterone and the date of their discoveries. A few of the photographs are poor.

The book should be useful as a textbook of physiology, particularly for advanced study or as an aid to application of physiological principles to clinical conditions.

F. E. F.

# THE JOURNAL

OF THE

## Missouri State Medical Association

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### PUERPERAL INFECTION

PALMER FINDLEY, M.D.

OMAHA, NEBRASKA

We are all vitally interested in the welfare of the parturient woman and it is a matter of no little concern that we are sadly remiss in affording her adequate protection against the hazards of childbirth; hazards that should have no place in modern obstetric practice. Of the more than 14,000 maternal deaths occurring annually in the United States it is estimated that 60 per cent of these lives are needlessly sacrificed for want of the application of well known principles. Add to this an unknown number of mothers with health undermined through the crippling effects of trauma and infection, some 35,000 children left motherless and a vastly greater number of children who are not receiving the needed care because of their mothers' disabilities, and we are made to realize how great is the needless sacrifice. Not the rich and not the poor but rather the middle class with limited incomes are the most frequent victims.

Brooke Bland says: "Of the lethal triad in puerperal women—sepsis, hemorrhage, toxemia—sepsis holds first place in accounting for 40 per cent of the patients who succumb." And puerperal infection is preventable in great part, as we all know. For thousands of years midwifery was in the hands of ignorant, superstitious midwives who knew nothing of the mechanism of labor and were powerless to relieve dystocia. For the most part they disregarded the ordinary habits of cleanliness. The learned medical profession would have nothing to do with the practice of midwifery; it was a woman's job, quite beneath the dignity of an exalted profession. There were consultants sometimes but they were the barber surgeons whose limited knowledge and skill was little beyond that of the midwife, though more deadly. Their chief function was the dismemberment of the child in their efforts at delivery. Under such circumstances the loss of life must have been appalling, as indeed it was.

In the sixteenth century the medical profession

began to take a hand. Version was revived and later the obstetric forceps came into use. These innovations doubtless saved more babies but afforded no relief from the ravages of infection. With the nineteenth century came antisepsis and with its application in delivery the mortality and morbidity rate was sharply lowered. With this priceless safeguard the profession became emboldened to adopt artificial means of delivery—accouchement force, versions, forceps and cesarean sections were employed to an ever increasing degree. These procedures added measureably to the hazards of childbirth and particularly to the incidence of infection. It is so today.

Unwarranted interference with nature's forces is responsible above all other factors for our high maternal mortality. There has been little betterment in the mortality rate in the United States since the turn of the twentieth century. In this period there has been a mighty impetus to operative interference, to cesarean operations in particular. To be sure, the maternal death rate has been slightly lowered in this time but there has been little or no lessening of the incidence of lethal infections. It is largely to the management of toxemias that we must give credit for whatever advance has been made in the saving of life.

We have made gratifying progress in late years in postgraduate instruction, in providing larger facilities for clinical instruction to students and nurses, in establishing prenatal clinics, in creating more and better maternity institutions and in improving the technic of operative obstetrics. Yet with all these there is convincing evidence that the United States lags behind most of the civilized world in checking the ravages of infection in childbirth. The latest available statistical report (1936) from the Children's Bureau of the United States Department of Labor reveals that among sixteen nations only Scotland exceeds our maternal mortality rate. Allowing for all discrepancies in statistical data we are bound to admit that we are among the highest of the civilized nations in maternal mortality. And, we ask, wherein are we remiss in affording protection to the childbearing woman? No single explanation will suffice. There are many con-

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tributing factors. There is the midwife problem which is shamefully neglected. But the midwife, who is delivering a quarter of a million babies a year, has been the scapegoat long enough. It is not in her hands that infection is most prevalent but rather in the hands of the general practitioner and the operating surgeon. There are ever increasing numbers unable to employ the services of physicians and nurses and we have not made adequate provision for this indigent class. A quarter of a million women were delivered in the United States in 1936 in the absence of an attending physician or nurse, and more than 15,000 women were unattended by doctor, nurse or midwife. More than 2,000,000 babies are born in the United States annually and in half this number the family income is under \$1000 a year. The highest birth rates prevail in the low income groups, as do the highest maternal and infant death rates. At a recent conference on "Better Care for Mothers and Babies" in Washington, D. C., there was expressed a need for Federal grants to states to provide for the needed care of indigent cases, the doctors to be compensated for their services.

We have said that progress has been made in the instruction of doctors, students and nurses, but clinical facilities are far from adequate. There is need for a greater appreciation on the part of the profession for prenatal and postpartum care and it is regrettable that the general practitioner does not more freely avail himself of the services of obstetric specialists in complicated cases. Incidentally, there is need for more highly trained obstetricians in many parts of our land. Many of the problems confronting the obstetrician call for the exercise of a degree of skill and judgment that can only be acquired by a life time of concentrated effort, and the general practitioner cannot be expected to meet such requirements. Nor can the general surgeon, for to him the problems of obstetrics are but an incident in his work-a-day. But what of the man whose zeal for gain of reward and notoriety, be he general practitioner, surgeon or obstetrician, impels him to resort to cesarean section for indications that are not in the category of good obstetrics? To him the birth canal is but an avenue of escape when he is otherwise engaged. With a zeal bred of impatience and an overweening ambition for surgery he interferes with the normal processes of birth in ways that lead to disaster. Whether he knows it or not he is contributing to an unwarranted maternal mortality. Cesarean section is an operation which, if wisely chosen and skillfully performed, should have a mortality of not to exceed 2 per cent. Yet in the nation at large the mortality from cesarean sections is said to be from 5 to 10 per cent and infection is the prime cause of death. Frank Lynch is authority for the statement that cesarean operations are responsible for one fourth of the maternal deaths after the seventh month of gestation.

Too often delay in instituting a well chosen means of delivery is as disastrous as a hasty decision, and

may well lead to a state of affairs that does not admit of a favorable outcome. Faulty judgment as to when to interfere or when not to interfere brings its penalty as truly as does the lack of technical skill in operating. Whitridge Williams, in 1917, had a mortality of 8 per cent in cesarean sections but only a one percent mortality in cases sectioned early. A. W. A. Lea of Manchester, England, states in his classical monograph on "Puerperal Infection" that 40 per cent of fatal cases show that some operative procedure had been attempted by the physician in charge.

Having paid my respects to the abuses of the cesarean operation I come to another operative procedure which has contributed much to maternal deaths. At every labor wounds are created, always at the placental site and often in the cervix and pelvic floor. Microorganisms contact these wounds, yet in the majority of cases there is no infection. This is so because nature has provided a cellular defense in the tissues which resists the inroads of the microorganisms. This biologic defense is found in the decidua; it is found in the wall of the uterus and in the parametrium in event that the invading organisms are not stayed by the protective zone of cells in the decidua. It is this defense mechanism that we do well to preserve and not break down and destroy by operative intervention. Thomas Emmet knew nothing of these safeguards but he did know from experience the disastrous effects of the curet when he pronounced the curet "an instrument of the devil." How seldom do we see a lethal type of infection in which there has been no meddling—some interference with nature's combative forces.

In the report of the Children's Bureau for 1934 we read: "Probably the most outstanding finding of this study is that one fourth of all the maternal deaths from sepsis following abortion were due to puerperal septicemia, and these deaths from septicemia are the greatest single cause of maternal mortality." There were 1825 reported deaths following abortion and of this number puerperal septicemia claims 1324 or 73 per cent. The report of the Analysis Committee sharply criticised the methods of physicians in the handling of abortions laying greatest stress upon the hazardous practice of curettage where a known fever existed. Ninety-four per cent of the deaths were in cases where the curet was employed in the presence of fever; this in contrast to a 50 per cent death rate in cases that were afebrile at the time of the operation. I quote from this report: "Physicians must be made to appreciate the seriousness of curetting these potentially septic cases." Intra-uterine manipulations of whatever nature are responsible for more deaths than no treatment at all. It is folly to attempt removal of inaccessible bacteria by means of the curet or douche. To attempt the impossible is the surest way of spreading an infection which might otherwise have remained localized and relatively harmless.

Surgery is rarely called for in the management of

puerperal infection. Curettage, the manual removal of the placenta, hysterectomy, the ligation of the pelvic veins and pelvic and abdominal drainage, are all procedures of limited application, requiring unflinching judgment and technical skill if they are to do good and not harm. With this in mind we look to less heroic measures and here again we encounter limitations beyond which no good may come. To my mind the sheet anchor in puerperal septicemia is the transfusion of small amounts of blood (300 to 500 cc.) at intervals of from twenty-four to forty-eight hours. Vaccines and serums are useless.

Since surgery has its limitations in the management of puerperal infection and is capable of so much harm, and since we have no specific remedy, nothing that we can rely upon with full confidence, we do well to place all emphasis upon preventive measures. We are mindful of the necessity of surgical cleanliness in delivery but is there equal recognition of the fact that there are air borne infections, that microorganisms in the air passages of attending doctors and nurses may be conveyed to the birth canal? Epidemics in maternity hospitals have been traced to this very thing. A recent outbreak of appalling proportions occurred in one of our foremost maternities, in which 15 per cent of all women delivered were seriously stricken and one third of them died. The contagion was directly traced to the throat of a resident physician. The wearing of face masks should be imposed upon all who come in direct contact with parturient women from the beginning of labor to the end of the lying-in period. Another worth while precautionary measure would be the taking of cultures from the throats of all attendants. Here we are reminded that we are not to take refuge in the chimera of autogenous infections to explain away our responsibilities in the spread of infection. We do not deny their occasional occurrence. While they serve well as an escape mechanism in shifting responsibility they, nevertheless, are a poor substitute for the actual cause of the infection.

While excluding all possible means of contamination we are to promote the general resistance of the expectant mother. Poor sanitation, malnutrition, anemia, tuberculosis, syphilis, diabetes, nephritis and toxemias all tend to lower the body resistance to infection. Prolonged labor, placenta previa and escaped waters are predisposing factors. Intra-uterine douches can serve no good purpose and may be harmful; vaginal douches are at best ineffectual in ridding tissues of invading organisms.

Have we in sulphanilamide the long looked for remedy in the treatment of blood borne infections? Some brilliant results are recorded and all we can now say is that sulphanilamide should be administered early in all cases where blood invasion is suspected or known. The chances of attaining a favorable reaction are determined by frequent blood cultures. Rarely will recovery take place if there are more than fifty bacteria to the cubic centimeter

of blood. If in spite of the continued administration of the drug the number of bacteria increase a fatal issue is almost inevitable. The usual practice is to give large doses at the onset of symptoms and the dosage tapered off from day to day, but not wholly withdrawn until the temperature has reached normal for two or three days. Foulis and Barr<sup>1</sup> gave twenty-four 5 grain tablets in each twenty-four hours for from seven to ten days; no harm resulted from these large doses. Daily doses of forty-eight tablets for four days were given in a single case with only slight cyanosis developing. These cases recovered. Colebrook and Purdie<sup>2</sup> report 106 cases of puerperal fever treated by sulphanilamide. One hundred of them were infected by hemolytic streptococci, three by anerobic streptococci and three by staphylococci. There were eight deaths in the group of one hundred cases due to the hemolytic streptococcus. Fifteen additional cases were subsequently reported with no deaths making a mortality rate in the 115 cases of 7 per cent. Of the eight deaths the authors say that only three lived long enough for chemotherapy to have a fair trial. The mortality in 199 cases infected by hemolytic streptococci and treated by sulphanilamide since 1936 was 5.5 per cent as compared with the average of 22.8 per cent for the preceding five years. This is an amazing revelation. This report, together with the rapidly growing literature on the subject leaves no doubt that sulphanilamide is a valuable contribution to the treatment of puerperal septicemia.

Sulphanilamide is usually administered in 5 grain tablets but the results are found to be more uniform when injected subcutaneously or intramuscularly. Perrin Long of Baltimore gives a 600 cc. 1 per cent solution of the crystalline powder in a 1.6 molar sodium lactate solution. This is the equivalent of 96 grains of prontosil for the first twenty-four hours. Even 135 to 225 grains per day have been given with no alarming symptoms. The dose is gradually reduced in amounts that will hold the blood sulphanilamide level to 100 mg. per cent. Since sulphanilamide is wholly eliminated by the kidneys it is advised that liquids be limited until the blood level of the drug is attained. A recurrence of fever several days after cessation of treatment calls for additional medication. The temperature will usually recede promptly to the normal level.

If untoward symptoms arise, such as elevation of the temperature, prostration, nausea and vomiting, skin rash, visual blurring, vertigo, acidosis, joint pains, acute anemia and agranulocytosis, the drug is withdrawn and large quantities of water are given to favor the elimination of the drug from the kidneys. Long disregards the appearance of cyanosis. Along with each 10 grains of sulphanilamide 10 grains of sodium bicarbonate is given to allay acidosis, nausea and vomiting, avoiding all drugs and foods containing sulphur.

Of the organisms responsible for puerperal septicemia it is the beta streptococcus hemolyticus that



responds most readily to sulphanilamide, but the gonococcus, gas bacillus, colon bacillus and pneumococcus are at times etiological factors and sulphanilamide will sometimes react favorably upon them.

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## COUNTRY OBSTETRICS

A REVIEW OF 600 CASES

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The Missouri State Summary of Vital Statistics for 1935, the last available report, indicates a total figure of 57,299 babies born in Missouri that year. Eighteen thousand, six hundred fifty-eight of these were born in the hospitals of the state and 38,641 were born in homes or other places. Further, of the total of 57,299 babies, 24,273 were born in the cities and 33,026 were born in the rural districts; that is, in the country or in towns of less than 10,000 population. This report also shows that 16,737 babies were delivered in the city hospitals, whereas 29,018 were delivered in the homes and in rural communities by physicians and an additional 2087 by midwives or relatives of the confined woman, making almost two times as many infants delivered by general practitioners as by the hospital obstetricians.

At the present time this nation is again conducting a campaign to lower maternal and fetal mortality in childbirth. A cursory survey of the files of *THE JOURNAL* of the Missouri State Medical Association for the last few months presents us with an excellent article on "Obstetric Care," by Miller,<sup>1</sup> an informative paper on "Maternal Welfare with Special Emphasis on Problems in Missouri," by Wilson,<sup>2</sup> a "Review of Cesarean Section as Found in the St. Louis Maternity Hospital," by Schwarz and Paddock,<sup>3</sup> a clear discussion of "Simple and Safe Home Obstetrics," by Lissack,<sup>4</sup> a "Report on Breech Delivery," by Soule,<sup>5</sup> and a well compiled "Four Year Study of Obstetrics in the Missouri Methodist Hospital, St. Joseph," by Stacy.<sup>6</sup> In addition to these there have, of course, been numerous articles in the national journals. Probably more often than has been justified lay papers and periodicals have carried ill informed "stories" in which it is asserted that one half, or more, of the maternal deaths in this country could be avoided by proper medical care. The proving of the falseness or truth of this assertion should rest squarely on the shoulders of the medical profession.

One of the proposed objectives of the Committee

on Maternal Welfare at its first meeting in 1936 was the "division of the state into districts for the purpose of unified investigation and approach." In the report on maternal welfare, Wilson<sup>2</sup> concluded, "I wish to repeat that greatest progress in the Missouri plan will not come from comparison with other nations, or even other states, but by careful survey and study of situations in Missouri which occur indigenously and can be solved only by special solution with the facilities at hand."

With the hope that this study will stimulate other physicians who are privileged to include obstetrics in their routine practice, the results of 600 home confinements which have been conducted over a period of ten years have been tabulated. The incidence of operative deliveries has been computed and the cause of all stillbirths recorded when possible. Data on lacerations and their repair have been withheld because it would carry the paper to unwarranted length.

Morbidity studies in a country practice are necessarily fragmentary as temperatures are not routinely taken unless some complication exists. All uncomplicated cases are seen the third postpartum day, at which time the breasts and perineum are examined, lochia inspected and temperature noted. Patients in whom a laceration has been repaired or in whom some other abnormality exists are seen as often as necessary. The appearance of any septic condition throughout the puerperium is carefully watched for.

There have been no cases of puerperal sepsis, the absence of which is evidence that asepsis can be maintained in country practice as well as in the maternity hospital. Undoubtedly the country parturient is blessed with a stronger resistance to puerperal infection than one of the same social class in the city which suggests that the "essentials of life, fresh staple foods, good water and ample exercise"<sup>2</sup> assist the physician in preventing obstetrical morbidity.

A complete physical examination is made of each patient at the time she presents herself for obstetrical service; this includes examination of the chest, abdomen, breasts, reproductive and urinary organs and complete blood studies when indicated with especial attention being paid the erythrocyte and hemoglobin values. Within the last year serological tests for syphilis have been done routinely, regardless of the patient's social standing. Pelvimetry is routinely done and recorded. This initial examination should be exhaustive enough so that the patient can and should be assured that she can safely proceed with the perils of pregnancy and look forward to the successful delivery of a normal child. After the first examination the patient is instructed to return every three weeks. At these visits weight, blood pressure and urinalysis are recorded. At the end of the seventh month of pregnancy the position and presentation of the fetus are determined and recorded.

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Table 1. *Obstetrical Record*

Name:	Age: 21	Date 9/18/37
Last Period: June 7, 1937		
Previous Pregnancies:	Para: 1	
None	Movement: Oct. 12, 1937	
Type of Delivery: None	Due: March 14, 1938.	
I. C. 26 cm.	Pelvic: Multiparous pelvic floor,	
I. S. 23 cm.	cervix slightly softened, uterus	
B. T. 31 cm.	size of large orange. Freely mov-	
Rt. Ob. 21 cm.	able. Adnexa normal.	
Ext. Conj. 18 cm.	Nipples: Retracted.	
Int. Conj. 11 cm.	Usual Weight: 125	Today: 123
Special:		
Date	Weight	Blood Pressure
9/18/37	123	100/60
10/ 9/37	128	110/70
10/30/37	130	124/80
11/20/37	133	120/78
12/10/37	140	115/75
12/27/37	145	120/78
1/14/38	Pos. L.O.A.	Present: Vertex F.H.T. ('x) 160
		MacD. 29 cm.
1/30/38	149	120/80
		Neg. for albumin

March 18, 1938. Labor started at 2 a. m. Delivered in home. Ether given at end of labor. Seven and three quarters pound boy. Spontaneous delivery at 11 a. m. No laceration except separation of mucous membrane at forchette. One suture taken. One cc. ergotrate given intramuscularly after delivery. Placenta delivered spontaneously 15 minutes later. Loss of blood 2½ ounces.

The record of each patient is kept on a simple card which may be obtained with very little expense and maintained with a minimum of time. At each prenatal visit a notation is made on the card. After the delivery, salient points in the labor and delivery are noted on the back of the same card, or a separate record may be kept. Approximately 65 per cent of the cases in this series reported for prenatal care.

The delivery in the home is made as nearly like that in the hospital as possible. The setup of the home delivery room has been made a standardized procedure entailing the labor of carrying a large obstetrical bag and a "pack" to each delivery. The bag is made up of two compartments; the upper containing instruments, solutions, anesthesia equipment and rubber sheet; the lower accommodates sterile goods, extra dressings and gloves, sutures, pads, scrub kit, nitrate of silver and necessary ampoules. The pack is prepared for use in a single delivery and contains only sterile materials such as towels, pads, leggings, sheets, placenta basin, medicine glass, cap and gown and dressings. Several of these packs are kept sterilized and two obstetrical bags are kept packed and ready at all times. A graduate nurse is taken to all home confinements. Upon arrival at the home, if the patient is in labor, she is shaved and given a surgical preparation. When delivery is imminent, the patient is placed crosswise in bed with the hips brought to the edge (a board placed under the mattress to prevent excessive sagging), and following strict surgical asepsis the delivery is completed, the nurse administering the anesthetic. Lacerations are repaired immediately. With this equipment there is no more reason for leaving a newly delivered woman in the home with an unrepaired perineal laceration than there would be in a well conducted maternity hospital.

When the home delivery for any one of many

reasons has to be conducted without the usual equipment, sterile dressings may be effected by boiling cloths or towels on the kitchen stove or baking them in the oven. Razors may be found in the poorest of homes, boiling water can always be made available, and antiseptic solutions are carried in the bag of every doctor.

After the patient has been examined and any laceration repaired information needed for filling out the birth certificate is obtained from the father or grandmother of the new baby. The patient is instructed in the care of the baby and how to assume the knee-chest position, beginning the day she gets out of bed and to be repeated twice daily until the baby is eight weeks old at which time the mother is given a careful pelvic examination.

It is believed that the postpartum examinations are just as essential to the health of the new mother as the regular prenatal visits. If the uterus eight weeks following delivery is not completely involuted and in the anterior position the patient is instructed to return every week until examination shows her to be normal.

Table 2 is merely a summary of the deliveries done, showing the proportion of primiparae to women who have borne children before and the small percentage of multiple births.

Table 2. *Summary as to Parae Multiple Births*

Deliveries	600	Per Cent
Primiparae	241	40
Multiparae	359	60
Single births	596	99.3
Twins	3	
Triplets	1	
Total births	605	

It is interesting to note that the percentage of primiparae in this series, covering a ten year period, is the same as that recorded in the report of the Section on Obstetrics at the Mayo Clinic for the year 1936<sup>7</sup> and that there is only one multiple birth to every 150 cases in this series whereas Stacy recorded one to every 73 cases in his report from St. Joseph for a four year period.<sup>6</sup>

In Table 3 is described the method of delivery used in this series. It will be noted that 68.33 per cent of all cases were delivered spontaneously; if this is further divided according to the parity of the mother it is found that 49 per cent of the primiparae were delivered without assistance or interference and that 81.3 per cent of the multiparae were delivered spontaneously. In the Mayo Report,<sup>7</sup> 55 per cent of the primiparae and 86 per cent of the multiparae had spontaneous deliveries. In the St. Joseph study,<sup>6</sup> 71.77 per cent of all deliveries were spontaneous but they were not divided as to parity. Table 3 shows that 12.8 per cent, or approximately one out of every six deliveries, was effected by the application of outlet forceps. It cannot be said that this many forcep deliveries are necessary or good obstetrical practice. Unquestionably some of these, if given sufficient time, would have deliv-



ered without assistance. The doctor who is alone except for a house full of distracted and distracting relatives, with the telephone ringing incessantly and demanding his presence elsewhere, finds it difficult indeed not to surrender to the stress of the moment and the anxiety of the family and render a little obstetrical assistance. The same percentage of forcep applications is found in the St. Joseph series, while 10 per cent of all deliveries reported in the Mayo paper was effected by outlet forceps. In this series, the use of forceps other than outlet or low forceps was quite rare. The percentage of breech extractions found here, 3.66, is approximately the same as that found elsewhere. The percentage of podalic version and extraction, 7.83, is definitely higher than that found in Stacy's series.<sup>6</sup> He reported 1.5 per cent of his total deliveries by this method. Of the 583 births in the Mayo report only one was by podalic version and extraction. The apparently high percentage of this maneuver in the 600 cases reported here may be somewhat compensated for by the absence of cesarean sections, Stacy reporting 1.5 per cent of all deliveries by section while the Mayo series included 4.0 per cent both for 1935 and 1936 by that method. In reviewing these 600 cases three are found in which cesarean section if done at the proper time might have resulted in a live baby instead of a stillbirth; but as long as the maternal death rate for this country following section remains nearly 10 per cent, as pointed out by Schwarz,<sup>3</sup> this method of delivery should find little place in the procedures used by men practicing obstetrics in the country. The writer spent a year as an intern in one of the large general hospitals of Missouri and over 400 babies that year were born without the necessity for a single cesarean section. This training did not arouse a very great enthusiasm for this dangerous procedure.

Table 3. *Methods of Delivery in 600 Cases*

Method	Primiparae	Multiparae	Total	Per Cent
Spontaneous	118	292	410	68.33
Outlet forceps	50	27	77	12.8
Low forceps	28	7	35	5.83
Medium forceps	5	1	6	1.00
High forceps	1	1	2	0.33
Version and extraction	26	21	47	7.83
Breech extraction	12	10	22	3.66
Craniotomy	1	0	1	0.16
Cesarean sections	0	0	0	0.00
Totals	241	359	600	

The gross maternal mortality for all 600 obstetrical patients was three, a rate of 5 per 1000 births. These deaths were due to: one abruptio placenta, in a patient living eight miles in the country during a rainy seige of weather; one case of uremia associated with a premature birth; and one case of pulmonary embolus occurring on the tenth postpartum day.

The causes of fetal deaths in this series are listed in table 4. A total of thirty-four babies were still-born, but of this number twelve were so premature

that they should be classified separately as abortions. The use of a nomenclature which would differentiate between a baby which was dead before delivery was started and one which died during or soon after delivery would be of material benefit in any report of this nature. Five of these stillbirths were either macerated or monsters. Omitting these deaths we find a corrected fetal mortality of 40 per thousand births, or if the three neonatal premature deaths were excluded, 35 per thousand, which corresponds with the Mayo report of 34, the St. Joseph total of 41.5, and the State of Missouri grand total of 33.85 per thousand births.

Table 4. *Fetal Mortality*

Stillbirths	Number	Total
Face presentation	1	
Macerated fetus and monsters	5	
Maternal abruptio placenta	1	
Maternal eclampsia	5	
Prolapsed cord (spontaneous)	3	
Prematurity	12	
Trauma incident to delivery	7	34
Neonatal deaths		
Breech delivery—cerebral hemorrhage	1	
Prematurity	3	
Cerebral hemorrhage	3	7
		41

Total fetal mortality, not including premature fetuses or monsters, 4.0 per cent.

The macerated fetuses, monsters, maternal abruptio placenta, prematurity, maternal eclampsia and prolapsed cords, which had caused the death of the baby before the accoucheur had been given a chance, are accidents which as yet cannot be controlled, except possibly in some instances by better prenatal care. The seven cases of stillbirth due to trauma incident to delivery were all complicated by some sort of operative interference in which with better judgment or a more skilled operator might have resulted in a more successful termination.

The neonatal death following a breech delivery was due to a cerebral hemorrhage forty-eight hours after a difficult delivery in a primipara. No instruments were used. The three premature babies who died after delivery (spontaneous) were all in the seventh month of gestation and lived respectively one, two and four days after delivery. Possibly better care might have saved these babies, but generally premature babies may be as well attended in a card board or wooden box, warmed by blankets or hot water bottles, as in the better equipped hospitals. Although considerable time and patience is demanded any baby over 4 pounds in weight, having passed the seventh month of intra-uterine existence, if intelligently fed and handled, should survive.

The three neonatal deaths from cerebral hemorrhage were all difficult deliveries. One child was delivered with high forceps because of uterine inertia and lived two hours; one by podalic version with forceps on the after-coming head following a high posterior arrest lived five hours; and a pri-

mipara with borderline pelvic measurements was delivered by podalic version, the baby dying twenty-six hours later of cerebral hemorrhage. Cesarean section might have saved the last mentioned.

Table 5. *Type of Deliveries in Stillbirths*

Type of Delivery	Number	Per Cent (of 41)
Spontaneous (includ. 5 ppts.)	20	50
Podalic version and extraction	11	26
Forcep deliveries (all types)	5	12
Breech extraction	4	10
Craniotomy	1	2.6
Total	41	

Table 5 lists the type of delivery in the forty-one stillbirths with the percentage of each type of delivery to the total number of stillbirths. It is interesting to note that approximately 50 per cent of the stillbirths occurred in spontaneous deliveries with one fourth of that number occurring as precipitate labors. It is assumed that the babies which precipitated had been dead several days before delivery. Three of the mothers were nephritic. Of the remaining fifteen stillbirths delivered without interference, ten were premature, one was from a luetic mother, and two from nephritic mothers. The cause of the other two deaths was not determined.

It may be seen that 26 per cent of the total stillbirths were delivered by podalic version and extraction. This may be explained in this series because this maneuver has been used in preference to high forceps in practically all cases of high posterior arrest which could not be rotated. Of these eleven deaths following version, three were premature, two babies were known to be dead before delivery was attempted, one child, on whom forceps had been applied on the after-coming head, died from cerebral hemorrhage. This one and the other five deaths must be attributed to trauma incident to delivery. This gives a corrected fetal mortality for podalic version and extraction deliveries of 12.7 per cent. Irving<sup>8</sup> reporting a series covering ten years of obstetrical service in the Boston Lying-In Hospital quoted a mortality rate (corrected) in version of 16.7 per cent as compared to a 20 per cent rate over the same period for high forceps. In justice to podalic version and extraction, it must be stated that most of the difficult operative deliveries in this series were done by this maneuver.

In the five stillborn babies delivered with the aid of forceps, two were dead due to trauma in delivery. One of the breech stillbirths was from an eclamptic mother and three were premature infants. The one craniotomy in this series was in a face presentation which had been in labor for several days, the child having died before delivery was attempted.

#### CONCLUSION

The fundamental principles of obstetrical work do not differ in urban and suburban communities.

If the judicious use of sedatives to prevent exhaustion is not forgotten, if the fluid and food intake are maintained, and the pulse can be kept under 100 per minute, the country woman will deliver without interference as well as her city sister. When necessary, operative obstetrics in the country can be fully as successful as in the city. A comparison of these 600 cases of so-called country or home obstetrics shows little difference from those reported from large centers. It is believed that carefully compiled records by those designated as country doctors, some of whom have personally attended as many as 7000 parturients, would be of material benefit to the statistics at present being studied by the Missouri Plan for Maternal Welfare and Infant Care; and that progress may be made in lowering maternal and fetal mortality when a careful study of this nature can be made in Missouri and such remedial action as may be deemed necessary can be initiated.

101½ East Davis Street.

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#### DISCUSSION

DR. BUFORD G. HAMILTON, Kansas City: I think I am more enthusiastic over this presentation than any I have heard in a national organization. It was my pleasure to have Dr. Shaw on my service at the General Hospital and many times we discussed the fundamentals of obstetrics, the teaching of these fundamentals and the fact that if a man put these fundamentals into practice in the home he could do as good obstetrics as any obstetrician in the United States. It therefore gives me great pleasure from that standpoint to have this paper this morning.

Furthermore, from the standpoint of teaching, I have no criticism to make of the paper; but I would suggest that after hearing this paper you go back and teach in your schools that the fundamentals are necessary in order to be good obstetricians.

Another outstanding point in the paper is that the doctor has kept records and has had a chance to review his own work; he does not have to take the statistics of other operators, he has his own statistics and has accurately kept records.

We have heard in medical societies that prenatal care could not be given in the country but this paper proves that anyone who has the courage and intelligence and energy can do it.

I want to congratulate the doctor on this paper which should be published in a national magazine. I hope it will be a part of our JOURNAL during the coming year. It is the most constructive paper I have ever heard in this Association.



## TUBERCULOSIS COMPLICATING PREGNANCY

TREATMENT. REPORT OF CASES

ANDREW C. HENSKE, M.D.

ST. LOUIS

The successful treatment of pulmonary tuberculosis taxes to the utmost the patience, knowledge and skill of the attending physician. How much more apparent is this when the condition is complicated by pregnancy. Unfortunately in the past the therapeutic measures employed in pregnancy complicated by tuberculosis were based upon empiricism and not upon the information that we now have available, information which has been gained through the application of the more recent advances made in the handling of pulmonary tuberculosis.

The question whether or not pregnancy has any effect, deleterious or otherwise, on a woman with clinically active tuberculosis has been debated pro and con for the last few decades, with conclusions that are assumed to be favorable and unfavorable. The confusion and contradictory reports as based on statistical study are due to the fact, as Allen Krause<sup>1</sup> stated a number of years ago, that too often the term "pregnancy" has lumped together the three stages; namely, gestation, parturition and puerperium, and that no consideration has been given to the type of tuberculosis involved.

From the Medical Department of the St. Louis University School of Medicine and the Chest Service at Mt. St. Rose Sanatorium.

Read at the 81st Annual Session of the Missouri State Medical Association, Jefferson City, May 2-4, 1938.



Fig. 1. Normal adult female showing normal height of diaphragm between the tenth and eleventh ribs in P. A. view at end of inspiration.

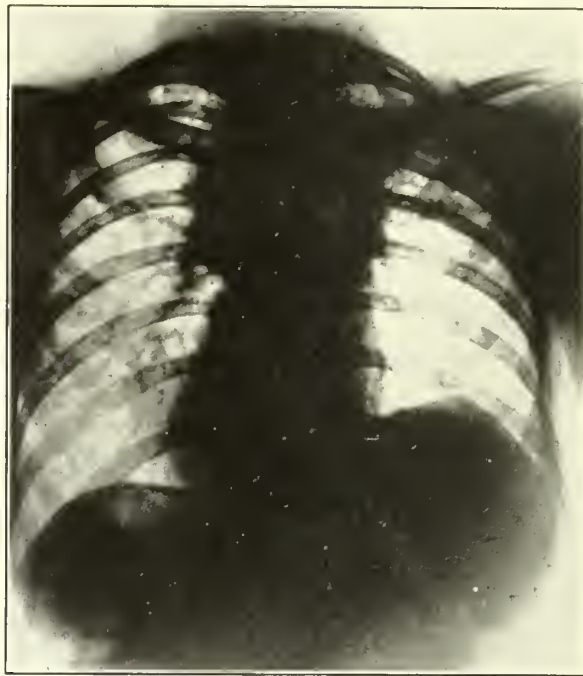


Fig. 2. Showing elevation of diaphragm to level of ninth rib following phrenic operation.

In current literature there are few satisfactory statistics on this problem. This is true because of the absence of satisfactory controls in reports and because the so-called statistics do not consider the type of pulmonary tuberculosis. Until recently, the classification of this disease was a quantitative one, that is, one based solely upon the extent of the pathological involvement.

In a recent article Ornstein and Kovnat<sup>2</sup> show that such a classification, to say the least, is entirely inadequate. They suggest a classification based upon the character or quality of the lesion present.

Briefly, this classification divides lesions into two groups; namely, exudative and productive. The exudative reactions are characterized by high sensitivity of tissue to tuberculous antigen and are divided into benign exudative and productive exudative. In the benign, the process is chiefly serous and is readily absorbed with no resulting tissue death. The patient becomes well within a short time leaving no visible trace in the roentgenogram. In the productive exudative type, besides a serous exudative, there is more fibrin and a great deal of cellular element. Fortunately, there is little tissue death and after a longer time the patient gets well. Roentgenograms will show only a small amount of scarring.

In the second group we have the nonresolving exudative tuberculosis and in this class there are two types. First is the caseous pneumonic tuberculosis in which there is great tissue destruction with cavitation and which is far more fatal. To this form is applied the term "malignant." The



Fig 3. Showing elevation of diaphragm to eighth rib following pneumoperitoneum treatment.

second type is the productive form of tuberculosis in which tissue sensitivity is low and the number of tubercle bacilli is small. The response is productive rather than exudative. This type has been classified as "chronic productive tuberculosis." The course is usually slowly progressive and frequently manifests itself only in the advanced stages. This condition takes about twenty years to involve both lungs.

In regrouping their cases complicated with pregnancy, Ornstein and Kovnat<sup>2</sup> had fifty-one in the caseous pneumonic group, nine in the resolving exudative group and twenty-five in the productive group. They had thirty-one deaths, all of them in the caseous pneumonic group. Of the remaining twenty cases ten left the hospital clinically unimproved and ten clinically improved. They then compared the course of fifty-one nonpregnant women having caseous pneumonic tuberculosis with the above group and found, to their surprise, that the death rate and the end results of the surviving ones did not differ materially from those of the foregoing group. Another investigator, Dr. Ernest S. Marquette<sup>3</sup> of the Glen Lake Sanatorium, Oak Terrace, Minnesota, in an article entitled "Contraception in the Tuberculous," recently made the following statement:

In studying this problem in 1921, we came to the conclusion that the harmful factor in this combination was the tuberculosis rather than the pregnancy. Therefore, we felt that the emphasis in the treatment should be directed toward the tuberculous process rather than toward the pregnancy. Accordingly, we concluded that an abortion was not indicated. This represented quite a departure from the accepted teaching and our first few cases that were carried to full term were watched

with some anxiety; but in the end the results confirmed our belief. From September, 1921, to February, 1933, therapeutic abortion was advised among our pregnant tuberculous women only once. During that time thirty-five pregnant tuberculous women were allowed to go to full term. Of that number, eighteen were classified as far advanced, thirteen as moderately advanced and four as minimal. Only three of this number died and their deaths were known to be inevitable after the first month of observation. This gives us a death rate of about 9 per cent in contrast to a death rate of 29.6 for all women from 20 to 50 years of age discharged since 1916. These thirty-five women, furthermore, gave birth to thirty-seven healthy children.

In addition to these thirty-five, there were thirteen pregnancies in which delivery was premature. In four it was premature because of spontaneous reasons and in nine it was induced. The first pregnancy was interrupted therapeutically. Death followed. The second, an ectopic pregnancy, was operated on at the second month. The remaining seven pregnancies were criminally aborted. As we did not advise an abortion, these patients obtained leaves of absence from the institution and had the abortion elsewhere. There was one death in this group. This makes two deaths in the group which had abortions and gives a death rate of 25 per cent in that group in contrast to a death rate of only 9 per cent in the group allowed to go to full term. While this entire group is small, still, in our series, abortion in the tuberculous pregnant woman proved to be more hazardous than allowing her to go to full term.

Therefore, our experience does not support the theory that the tuberculous woman should never become pregnant. Do not construe this to mean that we are advocating pregnancy, because we are not. We think it should be postponed until the proper time. But, if it does occur, we believe that an abortion is seldom, if ever, necessary.

There are a number of other investigators, notably Marshall<sup>4</sup> and Barnes and Barnes<sup>5</sup> whose findings are similar when based upon the newer classification. Their findings showed conclusively that

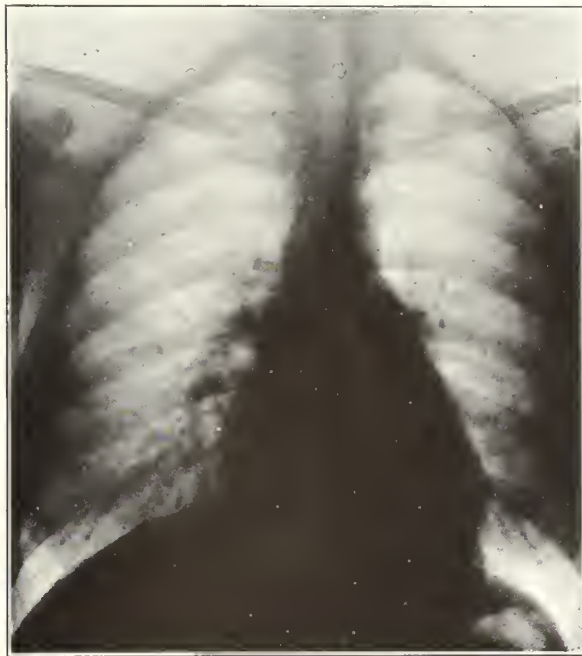


Fig. 4. Showing elevation of diaphragm to ninth rib at end of eight months pregnancy. Primipara. (Courtesy of Dr. John B. O'Neill.)





Fig. 5. Showing elevation of diaphragm to level of ninth rib at eight months pregnancy in multipara. (Courtesy of Dr. John B. O'Neill.)

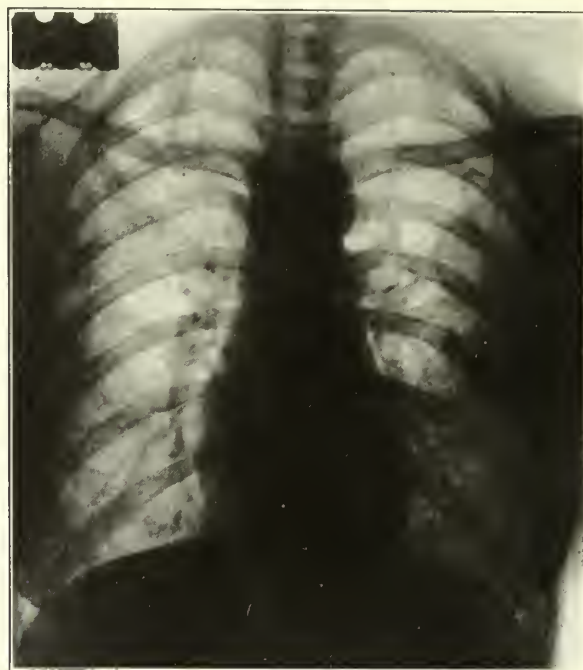


Fig. 7. (Case 2.) Primipara, one month pregnant. Diaphragm at level of eleventh rib.

an unfavorable prognosis did not depend on pregnancy but entirely on the character of the pulmonary lesion.

Moreover, Forssner<sup>6</sup> of Stockholm reviewed 30,000 cases of pregnancy. In no case of pulmonary tuberculosis aggravated during pregnancy could he establish a relationship of cause and effect. He could not demonstrate in any case that this aggra-

vation had been due to pregnancy. In his opinion pregnancy was usually beneficial to tuberculous women.

In a recent report Royston, Jensen and Hauptman,<sup>7</sup> in a study of fifty-one cases, came to the conclusion that there is no evidence to show that pregnancy increases the usual liability of tuberculosis to become more severe.

Considering now the opposite viewpoint, what do we find is present day teaching? In DeLee's fifth edition of "The Principle and Practice of Obstetrics" he makes the following statement: "There are at present three modes of treatment: Pregnancy be always interrupted as a curative measure, another that it be never interrupted, and a third that the cases be individually treated and gestation brought to an end only when certain symptoms indicate it. I am more inclined to active treatment. If the disease is active, abortion should be induced without delay."

In William's Obstetrics, seventh edition, there is the following statement: "In our opinion the main indication for therapeutic abortion in women suffering from tuberculosis is an early active lesion or the reactivation of an old lesion in pregnancy. When pregnancy has not advanced beyond the third month and the patient is suffering from an early active tuberculosis and is able to obtain adequate treatment for the disease, it is our policy to interrupt pregnancy."

From the foregoing it is clearly evident that two of the leading textbooks on obstetrics published in this country continue to recommend therapeutic abortion strongly despite the fact that practically



Fig. 6. Level of diaphragm at the end of eight months pregnancy at eighth rib.



Fig. 8. (Case 2.) Three and a half months pregnant. Diaphragm at tenth rib.

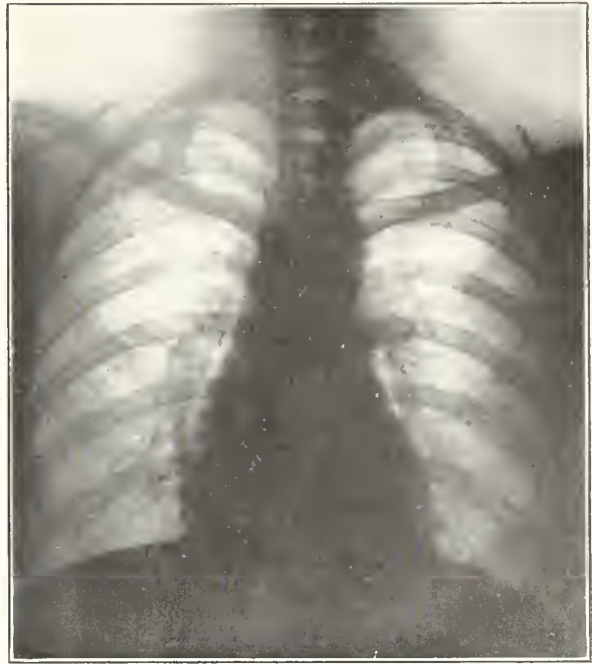


Fig. 9. (Case 2.) Seven months pregnant. Diaphragm at level of ninth rib.

all leading phthisiologists today are almost unanimous in condemning this procedure in the light of their own personal experiences.

During the last four years five cases of pulmonary tuberculosis complicated with pregnancy have come under our observation at Mt. St. Rose Sanatorium and in private practice.

#### REPORT OF CASES

Case 1. (Figure 6.) White female, aged 37, married, entered Mt. St. Rose Sanatorium on November 28, 1935. Diagnosis was far advanced bilateral tuberculosis with cavitation; eight months pregnant. Onset of illness three years ago with cough, fever, hemoptysis and three severe hemorrhages. The last hemorrhage occurred in January, 1935. There has been no improvement during the last year. At admission she had a temperature of 100.4 F., pulse 120. Had not received any special form of treatment. Married thirteen years, four pregnancies, three children living and well. The fourth pregnancy resulted in twins; both died, one at 8 years and one at 12 years. Her normal weight was 140 pounds; on admission she weighed 120 pounds having lost 20 pounds in three years. She was transferred to Firmin Desloge Hospital in February, 1936, where she was delivered of a nearly full term, normal female baby weighing 6½ pounds. She was transferred back to Mt. St. Rose where she became gradually worse following a spontaneous pneumothorax of the left lung, and died on March 18, 1936. Autopsy findings showed bilateral fibrocaseous pulmonary tuberculosis with cavitations, tuberculous enteritis and spontaneous pneumothorax of the left lung. This was a malignant type of the disease.

Case 2. (Figures 7, 8, 9 and 10.) White female, aged 24, married, entered Mt. St. Rose Sanatorium September 6, 1934. Onset of illness was in June, 1934, with tired feeling, cough and some loss of weight. Cessation of menses occurred at that time. Diagnosis at time of admission was moderately advanced tuberculosis, involvement of the upper lobe of the right lung and

lower third of the left lung; a primipara with pregnancy of approximately five months. Weight on admission was 96 pounds, normal weight 113 pounds, a loss of 17 pounds in three months. Weight at time of delivery, February 2, 1935, was 130 pounds, a gain of 34 pounds in six months. When finally discharged on May 23, 1935, three and a half months after delivery, weight was 131 pounds, sputum was negative for tubercle bacilli, Schilling count normal. Examination of lungs on September 8, 1934, revealed definite infiltration in



Fig. 10. (Case 2.) One year after delivery. Diaphragm at tenth rib. Note clearing of pathological condition.



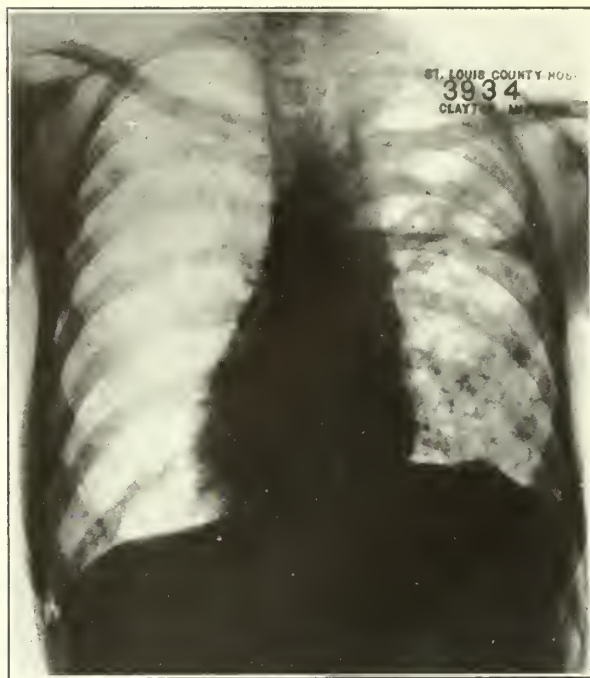


Fig. 11. (Case 3.) Eight months pregnant. Diaphragm at tenth rib.

the upper lobe of the right lung with numerous fine and medium rales heard before and after coughing, also a few scattered fine and medium rales heard in the upper lobe of the left lung. On December 8, 1934, examination of lungs revealed a diminution in the infiltration in the upper lobe of the right lung and an absence of rales. She still has slight afternoon fever. On May 23, 1935, weight was 131 pounds. Examination of lungs showed no evidence of activity. Schilling count and sputum were normal. Apparently is a quiescent

case. Schilling count on admission showed 24 stabs, 37 per cent segment, 33 per cent lymphocytes, 7 per cent monocytes. On May 24, 1935, the count was 1 eosinophile, 4 per cent stabs, 45 per cent segment, 48 per cent lymphocytes, 2 per cent monocytes. Sputum has been normal since October 5, 1934.

Case 3. (Figure 11.) White female, aged 18, married, admitted to Mt. St. Rose Sanatorium on May 19, 1933. Duration of illness was two years. Examination revealed extensive bilateral infiltration with consolidation and cavity formation involving the greater portion of both lungs. Diagnosis was far advanced tuberculosis with bilateral involvement complicated by tuberculous laryngitis and tuberculous enteritis. Had one child 1 year old and was at that time about eight months pregnant. Apparently had improved following her first child. Symptoms became severe four months prior to admittance. She was delivered on June 6, 1933, of a healthy female baby. Following delivery, patient became much worse and on June 29, 1933, a right phrenectomy was done. She died on July 19, 1933.

Case 4. (Figure 12.) White woman, aged 24, married, entered Mt. St. Rose Sanatorium on July 11, 1932. Had been ill since January 9, 1932. Remained in hospital for one year and gained 34 pounds. Discharged at own request. While at the hospital there was improvement following removal of a left phrenic nerve on March 2, 1933. Diagnosis was far advanced bilateral tuberculosis. Weight on admission was 90 pounds, on discharge one year later weight was 130 pounds with normal Schilling and negative sputum. She became pregnant in March, 1934, a primipara. She was delivered on November, 1934, of a healthy infant. During and following pregnancy she had no exacerbation. Six months ago the patient was in good health. She has since left the city.

Case 5. (Figure 13.) White female, aged 37, married, multipara. Onset about one year ago with history of hemoptysis, afternoon fever and loss of weight. For last two months had had hemorrhages and cough. Was seen first time on May 2, 1937. Diagnosis was minimal pulmonary tuberculosis with slight involvement in the apex of the right lung and pregnancy of about two



Fig. 12. (Case 4.) Diaphragm at seventh rib.

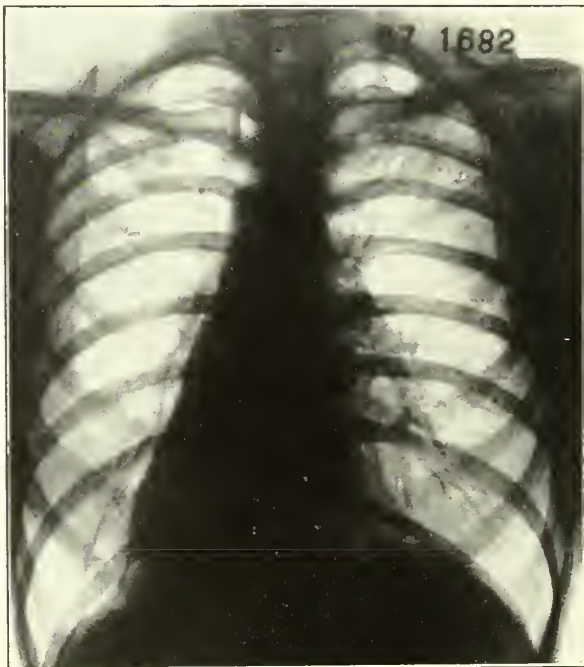


Fig. 13. (Case 5.) One month pregnant. No elevation.

months. Sputum was positive for tubercle bacilli. Schilling test showed slight infection. Pneumothorax on right side was instituted immediately and continued during the entire period of gestation. She was delivered on December 16, 1937, of a healthy male infant. Pneumothorax continued after delivery. Weight at time of first examination was 94½ pounds. At delivery weight was 118½ pounds; present weight 120 pounds. Sputum has been negative for tubercle bacilli for the last six months.

## COMMENTS

In reviewing this series we find that three of these patients had far advanced bilateral tuberculosis in whom the prognosis was absolutely unfavorable as to ultimate recovery. They all were delivered of normal infants. Two of them died within from four to six weeks after delivery.

The fourth patient had moderately advanced tuberculosis in the right upper lobe, and was five months pregnant. She was in an arrested condition at the time and went to full term. She is at present well and has a healthy child.

The fifth patient with early tuberculosis with positive sputum was given pneumothorax of the right lung for eight months during gestation and went through a normal delivery. She is today an arrested case still undergoing pneumothorax therapy.

Only the most ardent advocates advise termination of pregnancy within the first trimester. Four of the patients in our series were in the second and third trimesters. The two who died shortly following delivery would have died had they never been pregnant.

Patients do well during gestation for the following reasons:

1. All the physiological processes in the pregnant woman are functioning at their best during this period.

2. Due to the gradual increase in size of the gravid uterus, the intra-abdominal pressure is increased. This, in turn, results in a splinting of the diaphragm together with an elevation. As a result of this changes in the size and contour of the chest take place which tend favorably to influence recovery from tuberculosis. The diaphragm, during the latter half of gestation, is elevated and the lungs become compressed, perhaps as much as 30 per cent, thereby putting the lungs at rest in the same manner as a phrenic nerve operation or a pneumoperitoneum. The great danger is when labor suddenly causes the diaphragm to descend and expands the lungs. This danger can be modified or prevented by artificial pneumothorax, pneumoperitoneum or a phrenic operation immediately following labor.

## CONCLUSIONS

1. The incidence of pulmonary tuberculosis is greatest between the ages of 18 and 35 which, likewise, is the period of greatest fertility.

2. Proper obstetrical care with adequate treatment of tuberculosis is indicated.

3. All statistics that have been properly checked and controlled indicate that therapeutic termination of pregnancy, in the presence of tuberculosis, has no scientific basis whatsoever.

4. The question of therapeutic abortion is always of great significance and nowhere else is the clinician called upon to exercise keener judgment in his decisions.

5. Abortion per se, in otherwise healthy women, is known to be fraught with grave danger, and the danger is much increased in the presence of clinically active tuberculosis.

Finally, in hopelessly advanced cases, there is nothing gained by terminating pregnancy because you then have a 100 per cent mortality. In arrested cases, abortion is not only of no value but actually harmful, and in the partially arrested cases it may result in more harm than good.

317 University Club Bldg.

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## DISCUSSION

DR. LOUIS C. BOISLINIERE, St. Louis: Tuberculosis and pregnancy are entirely different entities. Tuberculosis is a pathological condition and pregnancy is a physiological process. There is no inherent or essential interrelationship between the two.

It was formerly thought and taught that the worst accident that could happen to a woman with active pulmonary tuberculosis was that of pregnancy. This conception of these two conditions was so universal that therapeutic abortion was naturally and honestly resorted to in many such cases. Some physicians still honestly believe that this is indicated and justifiable. However, almost universally in this country and abroad men engaged in tuberculosis work are practically unanimous in their conviction that therapeutic abortion is never indicated except in extremely rare instances.

Active tuberculosis in a pregnant woman may extend or retrogress to the same degree as in any other tuberculous individual, depending of course upon proper medical supervision and the extent and virulence of the pathologic process, as in any other chronic or acute disease. Experience has taught us that tuberculosis is frequently benefited by pregnancy and is not aggravated directly by it. We all know that during pregnancy most women are in excellent physical condition and maintain a high standard of health and resistance. Dr. Henske has ably demonstrated how pregnancy specifically and mechanically tends to limit the excursion of the lung by increasing abdominal pressure, raising the diaphragm and giving the lungs more rest. In fact, we now frequently resort to pneumo-peritoneum to effect the same result in men and nonpregnant women. After parturition, air is frequently introduced into the



abdominal cavity to maintain the same beneficial elevation of the diaphragm that occurred during the pregnancy. Other therapeutic measures, such as artificial pneumothorax, may be carried on during pregnancy and are frequently of great benefit.

Men working with chest conditions probably see more cases of tuberculosis with pregnancy than the individual obstetrician, who on discovering tuberculosis in his patient frequently consults one of us. We believe, therefore, that we are in a good position, because of our greater experience, to give a fair estimate of these conditions.

During my experience in chest work I have seen many cases of tuberculosis and pregnancy, in none of which the disease has been caused or aggravated directly by the pregnancy.

And such is the opinion of all chest men throughout the world. There has been a complete revolution and reversal of our attitude toward tuberculosis and pregnancy brought about and based upon scientific reasons, experience and the complete consensus of opinion of all chest men and others. Therapeutic abortion in tuberculous women is not indicated but definitely contraindicated except possibly in few cases, if at all.

I must compliment Dr. Henske on his complete exposition of the whole subject.

DR. OTTO H. SCHWARZ, St. Louis: I agree with everything Dr. Henske has said regarding the treatment of tuberculosis in pregnancy. In 1920 I was associated with Dr. Bredeck in studying the whole tuberculosis problem in St. Louis. He and I observed several cases together and treated them conservatively much to our satisfaction. At that time I took the trouble to review the cases of tuberculosis in pregnancy in Barnes Hospital and was amazed at the number of therapeutic abortions that have been done, not in active cases but in cases that had been arrested.

It is true that pregnancy in the presence of tuberculosis can be aborted satisfactorily, but the risk of lowering the diaphragm is obvious. Also there is a rise in metabolism, there is a positive nitrogen balance and the patient stores more nitrogen than she excretes. After pregnancy she has an active loss and should be treated properly, and that treatment can best be done in a sanatorium. At the Koch Hospital there is a delivery room and patients are sent there for delivery. The baby is sent to the hospital immediately and the patient is allowed to stay during the puerperium. That is most important in the management of these cases, both to take care of these patients during pregnancy and to see that they have the proper care during the puerperium.

There is one thing in the delivery of tuberculous women that should be adhered to. They should not be allowed to undergo strain in the second stage of labor for the simple reason that it may break down some protecting barrier.

Further, in the puerperium, as Dr. Henske has stated, the diaphragm is lowered and the lung capacity increased and under those conditions we might expect mechanical damage. For that reason these patients should be watched carefully during this time. I believe the men in chest work and obstetricians as a group should stress definitely to the Health Department the importance of giving us adequate means for housing at least the indigent patients.

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According to Adolph G. Kammer, Nathan Isenberg, East Chicago, Ind., and Melvin E. Berg, Saranac Lake, N. Y. (Journal A. M. A., Oct. 15, 1938), the periodic determination of the inorganic fraction of the total sulfate in the urine of workers is an entirely satisfactory form of medical supervision of employees exposed to a possible benzene hazard.

## EVALUATION OF THE MENTAL FACTOR IN TREATMENT OF PHYSICAL DISORDERS

F. A. CARMICHAEL, M.D.

FULTON, MO.

The practitioner of medicine is prone to overlook two vital factors that play a prominent role in the success of his efforts. One is *vis medicatrix naturae*, a potent adjuvant that not infrequently, in the face of well meant but misdirected therapeutic effort, brings the patient safely through a serious illness but is seldom accorded credit for the important part it plays. If we take but a moment to review the creda and accepted therapy of fifty years ago we cannot but marvel at the vitality of so many who survived the rigorous therapy and the rigid empiricism which forbade departure from established therapeutic orthodoxy.

The second factor that is prone to be overlooked, or if recognized undervalued by those devoting their efforts to the cure or amelioration of physical ills, is that the patient does not represent merely a receptacle in which is stored a large number of highly specialized organs or structures, any one of which may become deranged presenting a fairly definite somatic symptomatology and demanding specific measures of relief, but that he is a vital entity endowed with mental and emotional attributes frequently more important in the consideration of treatment and prognosis than the more gross organic derangements from which the individual suffers.

The experienced physician early develops a high degree of caution in offering a prognosis, which is usually qualified by the possibility of intervening complications, considered usually as those of a physical character. Mental or emotional factors are seldom considered and when recognized are apt to be decidedly undervalued if not entirely ignored. It is in reference to this mental and emotional factor that I write to the end that the close relationship existing between mental and emotional attitudes and the stresses of somatic disorders may be more clearly defined and accorded more careful consideration.

There is no line of demarcation between the fields of somatic and mental therapy. Those engaged in the practice of psychiatry are capable of recognizing the more common somatic disorders, interpreting their symptoms and administering treatment in accordance with accepted current practice. We have a right to expect of those whose efforts are confined to the treatment of physical disorders such knowledge of mental mechanisms and personality disorders as will permit the proper evaluation of symptoms of these in every case coming under their care.

The primary objective of this discussion is to emphasize the inescapable interrelationship of psy-

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Consulting Psychiatrist and Director of Mental Health and Hygiene, Missouri State Mental Hospitals.

chiatry and somatic medicine. It is trite to say that there is no physical disorder without its mental concomitant. No longer is the internist justified in saying, "I know nothing of mental disorders, they are not in my line." It would be just as consistent for the psychiatrist to say, "I know nothing of the chemistry of digestion or the physiology of the pancreas." Medicine and psychiatry are so interdependent that neither one can function fully without the other.

As we consider the prevention of mental disorders and many of these are preventable in their incipient stages, we recognize the important part the internist must play in preventive measures. The patient coming to the surgeon with a ruptured appendix presents a poor surgical risk, while one treated in the early stages invariably offers a favorable prognosis. Many mental cases are seen and recognized in their incipient stages by the internist, yet he does not insist on early hospitalization and treatment with the same earnestness and decision exhibited in the appendix case. The average duration of mental symptoms before hospitalization is sought is from six months to three years. During this period the family physician has had an opportunity of seeing the patient and being consulted by the family many times, but what is usually classified as an acute case has become chronic before being hospitalized.

Recent experience with the insulin and convulsant treatment of schizophrenia has convinced psychiatrists that the prognostic outlook for remission or improvement is in direct ratio to the chronicity of the disorder, the acute case responding more favorably than the chronic.

Much of the discouragement incident to failure in the older theories and methods of treatment has been dissipated by the encouraging results of newer forms of therapy. Whatever advances in preventive and curative methods may be achieved in the future cannot be achieved by the psychiatrist alone. He must, if progress is to be made, have the encouragement and support of the entire medical field and the sympathetic cooperation of the public.

The possibility of complications of a mental nature is given less consideration in the minds of the average internist or surgeon than any other that might supervene, but those of us whose field of endeavor has been among those suffering from mental illness and invalidism can recall innumerable instances coming under our observation where even a rudimentary knowledge of the potency of temperament, emotional and personality attributes would have prevented distressing mental storms, not infrequently involving lifelong invalidism.

The frequency with which we have noted the admission to mental hospitals of patients whose mental illness has been of months or years duration, who have recently undergone radical unsexing or other surgical operations the scars of which may still be unhealed at the time of admission and whose chance of recovery is not infrequently blasted by

the added trauma of surgery or the induction of a premature menopause, leads us to wonder if such tragedies are due to the physicians' ignorance or to cupidity. It is the rule in the history of female psychoneurotics coming under observation in mental hospitals that they have run the gamut of surgical procedures and have been anatomically abbreviated by the removal of tonsils, appendices, tubes, ovaries, gallbladders or otherwise remodeled by operations such as perineorrhaphies, hemorrhoidectomies, etc.

A more intensive study of the personality of the patient who comes to the physician month after month with distressing complaints for which relief is sought but in which no determined pathology is evident would in many instances prevent the individual from becoming a prey to the unscrupulous, a surgical recidivist, or arrest an otherwise steady progression from a state of mild anxiety and hypochondriasis to one of fixed depression or a psychoneurosis that may be permanently invaliding.

Another important point which the internist or family physician is apt to overlook which links the practice of somatic medicine with neuropsychiatry is the frequency with which meningeal invasion is found in early constitutional syphilis. Syphilologists state that invasion of the central nervous system is found in one third of early cases of constitutional syphilis coming under their observation. Their findings are fully corroborated by the serology. This tends to correct the time worn conception that involvement of the central nervous system is a late and somewhat rare sequel of syphilitic infection. The result of a central nervous invasion is the more ominous because the disease is asymptomatic in these early cases.

In the early stages of constitutional syphilis the serologic curve is benign but requires prompt and effective measures to restore it to a normal trend. If recognized early, 85 per cent return to a normal serology within a period of one year. If unrecognized or inadequately treated the serologic curve gradually assumes the malignant (paretic) character, only 45 per cent being amenable to restoration to a normal serology. It is obvious that the progression of invasion to the central nervous system makes recognition and treatment more difficult and changes in the central nervous system, that regardless of serological modification from treatment will persist, are to be expected.

We cannot be content with a demonstration and treatment of the obvious manifestations. The hidden and more sinister must be sought for, and this will demand an expansion of training and technic. The early syphilitic goes first to his family physician for diagnosis and treatment. The disease is usually in its early stages. It is not sufficient that the family physician determine the nature of his infection, but the extent must be definitely established as well. Also where early meningeal neurosyphilis manifests symptoms, they are of a character that may be easily overlooked or attributed



to conditions other than the provocative factor. Dizziness, stiff neck, headaches and even the nerve palsies accompanying the early manifestations of involvement of the central nervous system might be easily misinterpreted.

A survey of the field in relation to the possible complications in physical disorders requiring medical or surgical care impresses one more and more with the fact that those of a mental or emotional character are too frequently unrecognized, ignored or improperly evaluated.

The personality reaction in disease and its influence on the progress of the condition either toward recovery or an unfavorable termination is a highly important factor. The individual patient is an intricate structure made up of highly specialized functioning units, the disturbance of any one of which may produce an imbalance of the entire coordinating structure including the mind and personality. It is well known that worry, grief, nostalgia and other emotional factors seriously influence the recovery of patients suffering physical disorders. This has been particularly noted in the treatment of tuberculosis. Similarly, the translation of mental distresses into terms of physical complaints suggesting the exhibition of either medical or surgical measures must be considered. These patients usually present vague symptoms most if not all of which are subjective and unsupported by determinable pathology. These are usually of a type that present protean and unrelated symptoms. In many instances the desire for sympathy and attention is evident in their desire to discuss their various feelings and symptoms in great detail and they are usually placed under one broad classification, "neurotic." We treat them not scientifically but routinely with sedatives or placebos as our conscience dictates, failing to realize that in many instances a large part of our income is derived from their patronage.

At least two out of every five patients visiting the doctor's office and one out of four adults visited in their homes are suffering from mental or emotional distresses of which the physical symptoms that distress the patient are but an expression.

It is readily seen therefore that the personality reaction in disease and its proper evaluation by the medical attendant is highly important. We are aware that anxiety, continued worry and other emotional factors must be recognized in the prognostic outlook of every case. Not only the rapidity but the degree of recovery is frequently dependent on the mental attitude of the patient.

The tendency of many maladjusted individuals to translate their mental distress into terms of physical complaints that may suggest either medical or surgical intervention must always be in the mind of the attendant as the hypochondriasis of the psychoneurotic is only accentuated by medical or surgical measures that do not reach the true source of origin of these.

Centuries ago Plato said, "As you ought not to

attempt to cure the eyes without the head or the head without the body, so neither ought you to attempt to cure the body without the mind and this is the reason why the cure of many diseases is unknown to the physicians of Hellas because they are ignorant of the whole which should be studied also."

The etiology of the development of the various sectarian cults that now intrude upon the medical field is directly traceable to the failure of the physician to recognize and to adequately meet the demand of the mental mechanisms in disease and the failure to minister to the psychic needs of their patients. The large number of highly intelligent people who have become proponents of the various cults demonstrate quite clearly that medicine has neglected and is still neglecting a highly important and vital part of the individual patient when it ignores the mind and the emotional state.

Confucius said, "The mechanics of life depend upon diligence. The mechanic who would perfect his work must first sharpen his tools." It behooves us therefore to sharpen our tools in so far as a more discriminating consideration of personality and emotional factors in relation to physical ills is concerned.

The effect of nervous strain and nervous output on body structure and function is manifested in many ways. Recently a group of Toronto scientists have seemingly quite conclusively proven that acetyl choline, a chemical evolved by motor nerves in the transmission of impulse and activation of muscular contraction, may be the primary cause of coronary thrombosis. They have presented an extensive array of evidence, the result of animal experimentation, which tends to verify their contention.

That the importance of a more serious consideration of mental mechanisms in relation to their effect upon physical disorders is essential is revealed in a recent survey of sixty-eight medical schools which showed only one school in which no provision was made for a more extended training for the student in psychiatry. A noted medical educator has stated that mental mechanisms should find continuous recognition in the medical curriculum and the deficiency in the teaching of this subject is now a matter of general concern in our more advanced universities. In twenty of the sixty-eight medical schools covered by this survey psychiatry was placed on a parity with internal medicine, surgery, pediatrics and obstetrics. Thirty-five still limited psychiatry to a few lectures in the senior year. However, in Johns Hopkins, Harvard, Yale, Stanford, University of Nebraska, Rochester, Louisville and the University of California an extensive system of instruction has been adopted supplemented by courses in outpatient work in adult and child psychiatry.

It is not important for the general practitioner to be skilled in the differentiation of the frank psychosis but he should be skilled in recognizing and

offering proper treatment to the great army of neurotics presenting personality disorders and mental maladjustments that, disguised as physical complaints, form a considerable part of his office consultation work. The family physician is the one who is consulted at a time when the greatest good can be accomplished for this class by a proper understanding of their difficulties. Many a physician could derive an excellent income from the neurotics he turns away from his office each year because he feels he does not have the time to bother with them. As a matter of fact a little reading, a little wholesome knowledge of these mental mechanisms and a fair proportion of horse sense will permit him to handle the majority of these cases satisfactorily and to recognize conditions that are apparently beyond his ability to handle at a time when relief from other sources may be reasonably expected.

A careful analysis of the mental factors in relation to physical illnesses shows that 25 per cent of the sufferers have depression ranging in degree from apprehension, sadness, blues, a sense of futility, etc., to the more serious and sinister conditions such as mild melancholia, endogenous depression, psychoneurotic depression, situational depressions and definite hypochondria. The objective symptoms of these are noted in posture, facial expressions, impaired spontaneity in speech and action, desire to be alone, a lack of interest or concern in their surroundings or themselves and in many instances a retarded sensorium.

Subjective complaints of headache, dullness, constipation, gastro-intestinal distress, insomnia, early waking, a sense of unreality and sometimes mild depressive manifestations may progress to a frank psychosis. Feelings of tension with apprehension and mild depression are the concomitants of physical disorders in about 75 per cent of the cases. This is particularly true in chronic physical complaints. This feeling of apprehension and depression not infrequently leads to thoughts of suicide. Evidences of this veiled suicidal thought are manifested in a desire to see all of the relatives, to make a will or to indulge in long discussions with the family over future plans. A sudden emergence from such depressions in the presence of continued and unimproved physical disability should not mislead the attendant but on the other hand should be regarded with apprehension as the individual's mind is probably made up and the worry and uncertainty attendant upon the contemplated act has been settled to his own personal satisfaction.

The urge to translate one's intangible mental discomforts or conflicts into some tangible objective form should be carefully weighed by the internist or surgeon in every case, as flatulence, a spastic colon, eructations or gastric irritability may be but the projection of an unhappy or maladjusted home situation. Tachycardia, precordial distress, attacks of syncope or complaints of prostration, sweating or dyspnea may have no other founda-

tion than the maladjustment of the individual to family, social or economic situations.

In from 20 to 35 per cent of the major physical afflictions occurring in adults with which the physician deals we meet with mental states evidenced by feelings of discouragement, futility, blues and other mild depressions of an endogenous, situational, psychoneurotic or even melancholic type. They present a potpourri of manifestations entirely unrelated to any definite pathologic picture, manifested objectively by a fairly characteristic symptomatology as outlined and subjectively by complaints of headache, dullness, gastro-intestinal discomfort, confusion, insomnia, perplexity, petulance, etc. Many of the manifestations exhibited are classified as irritable heart, effort syndrome, neuro-circulatory asthenia, etc., dependent upon the personality type. They frequently simulate the thyrotoxic syndrome so closely that only by the most painstaking examination can they be clearly differentiated, and the diagnosis of thyrotoxic state in these cases is not infrequently erroneously made by excellent clinicians.

Many gastro-intestinal disorders are conditioned largely on emotional states. In fact every case presenting cardiac or gastro-intestinal manifestations should be scrutinized carefully as unrecognized personality and emotional factors may be present that are of vital importance both in the diagnosis and the successful handling of the case. The middle aged woman who consults her physician for "stomach trouble" is apt to be suffering from domestic or financial worries or mental conflicts because she thinks her husband is looking with too much favor on the hired girl, or her daughter is keeping company with a young man she does not favor, or the security of the home is threatened by a reduction in income.

The sexual neurosthenic, like the poor, is always with us. A man will bear the pain and physical handicap of a hernia uncomplainingly for years but becomes distraught, apprehensive and depressed over a slight varicocele. A noted surgeon once said that he operated on these cases to cure an ailment above the ears. Gynecologists in particular should guard against the neurotic factor that may underlie the symptomatology of pelvic disease. The number and variety of operative procedures undertaken to give relief to the emotionally disturbed or neurotic woman who requires psychic rather than physical therapy bears witness, by no means mute, to the frequency with which these factors are ignored. The protean nature of somatic symptoms exhibited by this group not infrequently lead to rigorous and protracted treatment for a nonexistent pathology thus tending to strengthen rather than relieve an inherent tendency toward invalidism.

The fact that schools of medicine throughout the nation are progressively building up their departments of neurology and psychiatry is in itself an evidence of the growing appreciation of the important role the mental process assumes in relation



to these somatic complaints and the necessity of a better understanding of these on the part of the practitioner of medicine. Upon the ability of the family physician to evaluate the symptoms presented as to their physical or mental genesis the future success of his treatment will be largely predicated.

Billings found that 45.5 per cent of so-called functional diseases entering a Colorado hospital were incorrectly diagnosed and unsuccessfully treated as hyperthyroidism. Most of these presented the typical anxiety syndrome with transient attacks of dyspnea, palpitation, precordial distress, cold perspiration, vertigo, gastro-intestinal symptoms, weakness, insomnia, anorexia, pains in the head, confusion, irritability and restlessness with feelings of coldness and loss of weight.

#### SUMMARY AND CONCLUSIONS

1. The mental attitude of patients suffering from somatic complaints is an important factor in the success or failure of treatment of their condition. It should be more carefully considered on the part of the medical attendant.

2. A large proportion of so-called functional diseases with symptoms referable to one or more specific organs, where these symptoms do not conform to classical grouping and where determinable pathology is inadequate to account for the subjective symptoms expressed, may be regarded as representing mental and emotional maladjustments that make them discouraging cases from a standpoint of somatic treatment unless the psychic factors are carefully sought out and evaluated.

3. The protean nature of somatic symptoms expressed by this group frequently lead to rigorous and protracted treatment for nonexistent pathology thus tending to strengthen rather than relieve an inherent tendency toward invalidism.

4. The fact that schools of medicine throughout the nation are progressively building up their departments of neurology and psychiatry is in itself an evidence of appreciation of the important role the mental processes assume in relation to somatic complaints and the necessity of a better understanding of these on the part of the practitioner of medicine.

5. The family physician is first to see the neurotic patient. Upon his care and patience in eliciting such information as will permit a proper evaluation of the symptoms presented as to their physical or mental genesis the future success of his treatment will depend.

State Hospital.

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Bert E. Hempstead, Rochester, Minn. (*Journal A. M. A.*, Oct. 1, 1938), points out that osteomas that arise in the paranasal sinuses are not common. Occasionally they are discovered in routine roentgenologic examination of the sinuses. They are not diagnosed clinically or even suspected of being present until either evidence of intracranial complications becomes manifest or external deformities appear.

## THE NEUROTIC FACTOR IN DISEASE

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This paper is intended to call attention to those peculiar reactions complicating the general practice of medicine and surgery by additional problems in medical psychology. I do not say psychiatry because they are not major mental disturbances with their devastating effects upon the individual and his personality. They do, however, involve the interplay of many peculiar attitudes on the part of the patient. To distinguish this group from the more severe mental disturbances one author has referred to them as a group called "minor psychiatry."

Interest in this topic prompted us to make a study of all cases with psychiatric implications admitted to the Firmin Desloge Hospital between 1933 and 1938. During this time the Department of Nervous and Mental Diseases was called upon to express an opinion in over 500 cases. In two thirds of these the problem was essentially that of organic disease of the central nervous system brought about through vascular change, trauma, brain tumor or infection. Of the remaining third, approximately 40 per cent were classical mental conditions recognizable as neuroses and psychoses, whereas the remainder, about one hundred and twenty in number, were mixtures of physical complaints complicated by the attitudes of the patients influencing to varying degrees the onset and course of the disease. In every instance the patient had been admitted to the hospital primarily for some definite physical condition the signs and symptoms of which were unmistakable. There was, however, some additional factor which influenced these diseases and this is the subject we would like to call attention to at this time. For want of a better term we have referred to it as "The Neurotic Factor in Disease."

In the treatment of sick persons many of these problems confront the physician from time to time. They are sometimes extremely interesting though in most instances complicate the plan of treatment and the recovery of the patient.

In the treatment of disease in general much depends upon the attitude of the physician himself. He may have been trained in medical school to think little about his patients as people but to concentrate his attention on disease. He may pay little attention to the factors which make the patient an individual distinguished from his fellows. He may see in the patient nothing more than the embodiment of a disease which has a certain detailed symptomatology, etiology, prognosis, pathological anatomy and treatment. With this point of view the practitioner may outline the treatment for the disease illustrated by his patient.

During the last years there has been a growing

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Read at the 81st Annual Session of the Missouri State Medical Association, Jefferson City, May 2-4, 1938.

recognition that disease has been overemphasized and that the patient has been overlooked. The tremendous strides made in diagnostic methods and laboratory medicine seemed to accentuate this tendency, although the scientific aspects of medical practice reached a new and all time high point of precision.

To do justice to the patient, therefore, the physician must take into consideration not only the laws of laboratory procedure, but also the laws which regulate the reaction of man to his environment even though these laws cannot be formulated in mathematical or precise physical terms. In treating the patient as a subject with a disease and to look upon the human characteristics of the patient as irrelevant and to ignore his life situations may cause one to overlook many factors essential for an understanding of the symptoms of the disease. The emotional and instinctive life of the patient, the family pattern, economic and social situations, may be essential factors in understanding and treating patients when symptoms may not at first suggest a complex origin. A consideration of these factors makes intelligible such symptoms as persistent headache, insomnia, gastro-intestinal disturbances, fainting, palpitation, variations in blood pressure, the frequency of attacks of vertigo, refractive disorders, pelvic and abdominal complaints. These symptoms are understandable not only in the sense that they are physical manifestations of conflicts arising within the personality as seen in the psychoneuroses, but oftentimes as expressions of both physical and mental inadequacy which may be symptomatic of some definite physical disease, its so-called psychic component.

Our first case is an expression of emotional and economic insecurity in terms of a physical disease which was genuine but which in turn liberated more definite trends of emotional instability.

#### REPORT OF CASES

The patient was a 48 year old housewife, admitted to the Firmin Desloge Hospital on two occasions, first in June, 1933, a few months following the death of her husband. Her complaints centered about her gastro-intestinal tract and were essentially those of abdominal fullness and bloating, obstinate constipation, frequent bleeding, nausea and vomiting and terminal pain on urination. All symptoms were present for the last five years but more intense during recent weeks. Last menstrual period reported at age of 41.

On physical examination she was found to have a temperature of 101.8 F. and generalized tenderness over the entire abdomen. Later examination showed tenderness over the gallbladder and right kidney; cystoscopic examination showed a bilateral nephroptosis with impaired drainage at the ureteral pelvic junction.

Her temperature was persistently high for more than six weeks. At times she was definitely confused and psychotic. She improved mentally and was discharged September 7, 1933. Diagnosis was pyelonephritis.

She was readmitted on October 4, 1935, complaining of extreme nervousness and frightful experiences at night when she would waken screaming following some nightmare. She experienced chilly sensations and shaking from head to foot and would frequently waken

drenched with perspiration. Physical examination at this time was entirely negative except for a mucous colitis and sinus arrhythmia.

Further investigation of her background brought out that as a child she described herself as being somewhat idealistic. Had originally desired to be an actress and had achieved considerable prominence in amateur and semiprofessional theatricals. When she was married she had to give up much of this activity but still coached amateur groups on occasion. She interested herself also in various philanthropic enterprises from which she derived a great deal of satisfaction in such situations as would call forth an emotional response.

With all these interests and activities she carried on quite successfully until her husband's death in 1933. This precipitated a strong emotional response and besides made her financial security uncertain. She decided thereafter to go into the funeral directing business inasmuch as this would not only provide her financial security but would also allow her emotion expression to have an appropriate outlet. Her venture was for the most part successful, but she did not take into consideration the fact that her business had to be approached from the practical side as well as the emotional. Several incidents occurred in which value of her work was not appreciated by the families of several persons whom she had taken care of after death. The most recent was a week before admission to the hospital and concerned a friend of many years' standing who had set aside a certain amount of money for her own funeral which the patient in due time arranged for. Some distant though closest relatives of the dead person hearing of these financial resources immediately cancelled all funeral arrangements and ordered that she be buried in a rough box and blanket as quickly as possible.

Such experiences repeating themselves at fairly definite intervals tended to increase her instability to the point where this last incident was enough to produce a breakdown.

In considering this case in its entirety it can readily be seen that at no time could the patient's physical complaints or emotional responses be considered as the entire problem. In other words, the physical as well as emotional aspects had to be considered separately and individually.

The next case presents a problem somewhat similar to this and involves an inter-relationship of conflicts based on difficulties in the religious, economic and physical fields.

The patient was a 29 year old housewife admitted to the Firmin Desloge Hospital because of dizziness, fainting attacks and periods of unconsciousness of eleven months' duration. The attacks seemed to begin after an explosion which wrecked a filling station operated by her husband and also destroyed their household equipment as they made their home in the same building. There were also periods of shortness of breath following exertion which seemed to precipitate her attacks. The unconscious periods would last from 10 to 15 minutes and she would be tired for several days thereafter.

The patient was married twice, the first at 18 years of age to a man who was quite abusive. Shortly after the birth of her first child this man deserted her and she has not seen nor heard from him since. She remarried again within a few years. A second child was born five years ago, but following delivery menstruation became irregular and surgical measures were necessary for treatment resulting in the removal of much ovarian tissue. Since then there has been a gain in weight of about 100 pounds.

External indications reveal compatibility in the mar-



riage although their economic status and industrial condition in general have created some friction. There has also been a great deal of worry and anxiety on the patient's part during the last six years concerning her 9 year old son who is an accomplished dancer but whose training and general care have been in the hands of a dancing school. His aptitude as a dancer has been so notable that the manager of the dancing academy has practically taken him into his own family. Efforts on the part of the patient to regain control of this child have been rather dramatic; they were first opposed by the dancing master on the grounds that his future as a dancer would be much better if he remained in his care. Later, she was directly opposed by him in court when he brought action against her on the grounds that she was unfit to care for her child. This entire situation was fraught with all sorts of legal difficulties, most of which were extremely vague to the patient.

Physical examination showed she was obese and markedly overweight for her height. Hirsutism of the face was noted for the last seven or eight months. Heart was enlarged to the left and action irregular. Blood pressure was 105/70. Spinal fluid was under slightly increased pressure but the dynamics were normal. Sugar tolerance test showed a hypoglycemic curve, roentgenograms of the gastro-intestinal tract and the skull were entirely normal. Neurological examination gave essentially negative findings although during the course of an examination the patient grew faint and cyanotic and fell to the floor without injuring herself. At this time there was an increase of both heart and respiratory rate and she became cyanotic.

Additional history indicated frequent episodes of sugar hunger and effort was made to associate this syndrome, her obesity and her cyanosis with a pituitary tumor. However, further investigation failed to verify the presence of an intracranial neoplasm and in the last analysis was considered as a polyglandular syndrome.

In this instance can be seen a mixture of emotional instability with physical complaints which were definite. The earlier history of marital incompatibility, difficulties in family management undertaken in an inadequate fashion are all of interest in the light of her physical complaints and her physical disease which was also recognizable.

Our next case is that of a mixture of functional symptoms which appear as an early stage in a more severe organic disorder, in this instance affecting the central nervous system.

The patient was a 52 year old male, admitted to the Firmin Desloge Hospital on April 26, 1937, complaining of vomiting and loss of strength. The onset of the vomiting was about three weeks prior to admission. The loss of appetite was noted as early as the latter part of January, 1937. At the same time he began to notice that he had pains in the small of the back. On admission he stated that he could not retain food and that people told him he always looked yellow just before he vomited. Coffee nauseated him particularly, whereas tomatoes, apples, dried foods and wine were agreeable. He was noncommittal so far as cabbage, chili or fatty foods were concerned.

Two or three years prior to admission he noticed blood in his urine. He was subsequently treated by physicians for kidney trouble, anemia and arthritis. Recently he has experienced pain radiating down the anterior surface of the leg and toward the testicles. He has also fainted recently on two occasions. These fainting attacks somewhat resembled convulsions but the description of relatives was very indefinite. By many they were thought hysteria because for some time he had been worrying about financial troubles,

particularly since he was the sole support of two sisters about his own age who seemingly enjoyed ill health.

On physical examination he appeared undernourished and emotionally unstable. Tonsils were enlarged. Roentgenograms of gastro-intestinal tract and cardio-respiratory system were normal as were electrocardiograms.

He remained in the hospital from April 26, 1937, until May 3, 1937, when he was discharged, his condition unchanged, with diagnosis of gastric neurosis and neurasthenia. He was seen frequently the following months, his general status remaining much the same until July when he went to the country and with rest gained weight.

He was readmitted to the hospital on September 2, 1937, complaining of severe headaches, dizziness, loss of memory, dysarthria and dyspraxia.

Neurological findings September 4, 1937: Marked aphasia, chiefly motor, reflexes in right upper extremity more active than those in the left, coordination in finger to nose tests poor.

Encephalography, September 4, 1937 was unsuccessful. On September 6, 1937, neurological findings were reflexes hyperactive along the entire right side, aphasia still marked, bilateral Hoffmann and Babinski signs.

September 15, 1937, ventriculograms showed marked cortical and convolutional atrophy.

Following air studies patient was irrational and psychotic for several days. Then followed a gradual recovery until October 25, 1937, when he was discharged as improved. He returned home where he remained for about a month. He contracted some intercurrent infection and died December 15, 1937. Autopsy was not obtained.

In summarizing this case it can be seen that the onset of his illness was ushered in by numerous symptoms which one might consider indicative of a functional nervous disease, those of nausea and vomiting, various aches and pains and a fainting attack which many thought hysteria. However, these symptoms really occupied but one phase in a severe organic degenerative disease of the brain.

Our last case is that of a 48 year old clergyman who was admitted to the Sacred Heart Hospital of Fort Madison, Iowa, in August, 1937, for an exploratory laparotomy. For the last eighteen months he had been complaining a great deal of many things. He began to have headaches, backaches, temporary periods of nausea, was not resting very well and in general felt indispensed.

Past medical history was essentially negative. He had always enjoyed good health and was considered by many an extremely robust individual, straightforward in all dealings with himself and others. During the last seven or eight years he had been confined to a parish heavily in debt due to injudicious investments by his predecessor. During the period that he managed the parish he had reduced the debt from over \$150,000 to a figure close to \$85,000. At all times he seemed extremely phlegmatic, happy-go-lucky and little concerned over worries domestic, financial or physical so that when he began to complain it was felt that he was actually ill. On original examination the findings were entirely normal. He then consulted another physician who examined him thoroughly and still the findings were normal. For the next several months he visited different clinics in the same and nearby states, remaining at these institutions for little more than cursory examination.

During the spring of 1937 he seemed considerably agitated at times. At other times detached and confused, misidentifying people and getting lost on the floors of the hospital familiar to him for many years. At this time he returned to his original physician again

for further advice. Consultation with a gastro-enterologist was suggested. For this purpose roentgen ray studies of the gastro-intestinal tract were ordered, but before these could be made he had a gastric hemorrhage which required transfusion. When his condition had improved to the point where further investigation could be attempted he reentered the hospital. On operation a carcinomatous mass was found on the lesser curvature extending to the liver, the aortic glands and structures in the mediastinum. Postoperatively his course was progressively down hill and he died on October 10, 1937.

In this case the early symptoms were also essentially those of a functional nervous disease and for several months he was thought to have a psychoneurosis of some kind, but these like those in the foregoing cases were merely indicative of some more serious underlying organic trend. The symptoms of mental disease could probably be explained either as intracranial metastases which produced clinical symptoms before the original focus of the malignancy had reached any appreciable size, or that the malignancy had reduced his general efficiency to the point where he was no longer able to carry on his work at its former level and the recognition of this latter fact had liberated functional trends heretofore never significant.

In the time at our disposal it is impossible to go into any deep or prolonged discussion of the psychoneuroses. However, it is gradually becoming recognized that functional elements are widely prevalent throughout medical practice despite the attitude of many in the past that mental states were in no way related to physical states and that the art of medicine was something to be acquired but not recognizable as a science.

In dealing with such situations it is true that hard and fast rules cannot be dogmatically set forth. A contribution can be made, however, to their better understanding which I am sure will prove helpful. It is for this reason that psychiatry has attracted the attention of many medical schools as a necessity in the training of physicians. I do not mean psychiatry as a specialty but as a fundamental branch of medicine. The latter concept is perhaps a wide departure from psychiatry as we know it in the state hospitals or in dealing exclusively with insane people. It is in this latter point that one must differentiate between the psychiatrist as a specialist and the psychiatrist as a fundamentalist.

In the general practice of medicine we recognize that certain features of practice are influenced by various fundamental facts which we gather from various phases of medicine, whether that be otology, ophthalmology, obstetrics or any other specialty. Such fundamentals are also obtainable from psychiatry and can be summarized to a knowledge of the various phases and aspects of personality development. The personality as a whole is a reacting organism disturbances of which may manifest themselves in various ways.

Sometimes the personality as a whole is singularly inadequate to meet all or any of life's situ-

ations and it is not strange to note the presence of functional nervous trends at practically all phases of the individual's existence. At other times we find a personality which is unusually adequate to meet any situation which life can concoct for it and enjoy them all. In such an instance the appearance of functional trends are most unexpected, and in the event they do appear may be merely resonant of some underlying organic trend.

In the evaluation of such trends much depends upon the history of the individual himself. If his inadequacies have been present during his entire life we may be able to evaluate the complaints accordingly, but if after a relatively successful career the complaints begin to show themselves we should be somewhat hesitant in labelling him a neurotic until absolutely all possibilities of organic pathological conditions of any kind have been eliminated and even then our attitude should be hesitant.

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## EFFECT OF WORK UPON THE HEART

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During an investigation at the University of Missouri of the effect of exercise on the hearts of athletes, in an attempt to determine why a small percentage (something under 10 per cent) of athletes show cardiac hypertrophy, we found ourselves dissatisfied with the standard tests to determine cardiac function. A cardiac function test is simply a test to determine how an individual's heart responds to work and should be carried to the point of fatigue in each instance.\*

In dealing with the age group of university students where there are some individuals trained to long continued athletic exercise and others having no bodily training at all a standard test was necessarily futile, so it became necessary to evolve a test that could be carried to the point of fatigue in each individual tested. This was done by bandaging a Bowles' stethoscope with a 5 cm. bowl and six feet of rubber tubing over the precordia of the individual to be tested. Then the individual was exercised in the squatting, or setting-up exercise, which quickly fatigues even the trained athlete. This was carried to the point of exhaustion in every instance, exhaustion being indicated by a flushed face, breathlessness and stumbling.

The pulse was taken during rest before exercise and every ten seconds during exercise with five second intervals to record the rate, thus making a notation of the cardiac rate at every fifteen sec-

From the Student Health Service, University of Missouri, Columbia.

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\*Data published in the Proceedings of the Eighteenth Annual Meeting of the American Student Health Association, in Chicago, December, 1937.



onds. These records were reduced to graphic charts and after the test had been used in several hundred instances a number of interesting phenomena were recognized.

The heart is a positive pressure pump which most precisely adapts itself to the constantly changing requirements of the body. This adaptation consists, as in any other pump, in changing the strength of each contraction and in changing the frequency of the contractions responding to the demands of the systemic circulation by both the strength of the heart beat and by the rate of the heart's contractions.

The regulation of the heart rate is a function of the nervous system whereas the adaptation of the heart for the purpose of a greater output is intrinsic in the heart itself, the heart being able to increase its normal output many times by increasing the tonicity of its muscle and providing for dilatation of the chambers by the lengthening of its muscle fiber.

These changes take place from beat to beat in answer to the requirements brought about by changes in the systemic circulation.

Out of the great mass of investigative material that has been published in connection with the heart rate and cardiac output, I wish to call attention to the three following factors:

First, it was suggested by Marey, and has been called Marey's law, that the heart rate has an inverse relation to the blood pressure; that is, the higher the pressure the lower the rate. Heymans and Ludwig have shown that the slowing of the pulse is due to the effect of an increase in blood pressure on the nerve ends in the aorta. Later, Hering added the effect of this same pressure in the carotid sinus, both acting reflexly on the vagus to slow the rate of the heart.

Second, Starling and others have shown that the essential factor governing the output of the heart is the inflow; that within physiological limits the force of the heart's contraction depends upon the extent to which the heart muscle has been stretched by incoming blood; that by increased tonicity (strengthening of beat) and dilatation (lengthening of cardiac muscle fiber) the heart increases its output at the demand of an increased inflow.

Third, the rate of the heart responds to venous pressure. As shown by Bainbridge, the heart reacts to an increased venous return; that is, dilatation of the great veins entering the right auricle and the right auricle itself, by acceleration of the rate of the heart. This acceleration is evidently reflex in character, the reflex path running to the vagi and also to the accelerator nerves, the acceleration being the result of reciprocal action between the two sets of nerves but being due chiefly to diminution of the vagus tone.

Nowhere, however, is there mention of any controlling factor of rate above the resting level at seventy-five beats per minute. Bowen, in his work on bicycle riders, briefly mentions that the rate

tends to reach a plateau. MacWilliam's work on the effect of chloroform on the cardiac rate in cats mentions that after the initial excitement the rate tends to stabilize at a high level. No deductions were drawn from either of these observations.

In view of these brief facts, taken from many pertaining to the heart, let us look at the results of our fatigue test in a normal patient. His rate at rest is in the near neighborhood of seventy-five beats per minute, the result of a nice balance between the accelerator and depressor nerves of the heart.

Immediately on exercise, starting within one cardiac cycle, there is a rapid rise in rate due to the institution of the mechanism of the Bainbridge reflex. This acceleration is due chiefly to the diminution of the vagus tone and slightly to the increased accelerator tone, this being brought about reflexly from the dilatation of the mouths of the greater veins of the right auricle with venous blood. Instead of this acceleration continuing indefinitely to the point of exhaustion of the heart, we find by our test that this acceleration continues until, within five seconds, it reaches 120 beats per minute and there it remains upon a plateau, beating 120 beats per minute, or in the close neighborhood of 120 beats per minute, until the individual becomes exhausted. Evidently the rise in rate is stopped by the working of the modern conception of Marey's law (the increase in aortic and carotid pressure reactivating the depressed vagus function) bringing about a new equilibrium that forms a normal working pulse rate of 120 beats per minute. We know that it is the vagus action because atropine abolishes it.

The onset of Starling's cycle is indicated by a suddenly marked increase in the cardiac first sound and sometimes a change in quality of sound as well.

After the individual becomes exhausted and is allowed to rest there is another immediate rise in rate reaching its maximum within five seconds of time.

In untrained individuals this can be a rise of from thirty to fifty beats per minute. In the trained individual this rise is usually from ten to thirty beats per minute. The rise in rate is brought about by the sudden cessation of the working of Marey's law, that is, it is brought about by the sudden drop in blood pressure in the aorta and carotid sinus allowing the accelerator influences free play. The vagus now slowly regains its tone and from the highest point the rate slowly drops, reaching a normal rate in from sixty to eighty seconds after the cessation of exercise.

This describes the reaction of the heart to work in the normal individual. We have encountered three types of individuals, however, that do not respond in this way to exercise.

First is the vagotonic individual. Vagus tone is essentially of a protective nature and its development depends greatly upon the requirements of the individual. In some persons this protective tone of

the vagus (although there is some doubt that the vagus alone is involved) is below par and this autonomic imbalance is the cause of many functional disturbances that are grouped together under the symptom complex of vagotonia. The vagotonic individual has no normal resting cardiac rate; it may be anywhere between 90 and 110.

In the vagotonic individual with the beginning of exercise the cardiac rate responds to the Bainbridge reflex and at the point where it should meet the vagus control, i. e., 120 beats per minute, there is no check upon its velocity and it increases to an exceedingly high rate causing the individual to become exhausted quickly. On rest this person does not have the rise in rate which in the normal individual comes with the release of the vagus from the stimulation of the distended aorta and carotid sinus; but that control being absent and the rate having risen to an uncontrolled level (sometimes as high as 240 beats per minute), the rate starts dropping from its highest point on cessation of exercise. However, when the slowly dropping rate reaches 120 beats per minute it is held on a plateau at this level for an indefinite length of time, evidently allowing for certain readjustments in the circulation and within the heart itself made necessary by the extreme rate. After the pulse has been held at this plateau of 120 beats (which we designate the plateau of rest and which strangely coincides with the plateau of the working rate of the heart), for from thirty to eighty seconds or more, it slowly seeks its previous resting rate.

The second type of individual that does not respond normally to exercise is the one with a myocardium so damaged that there is no longer a normal conductivity of impulses through it. The reaction in cardiac rate to cardiac fatigue in this type is exactly the same as that of the vagotonic individual, including the plateau of rest during the period of recovery at 120 beats per minute.

The third type of individual that does not respond normally to exercise is the individual with

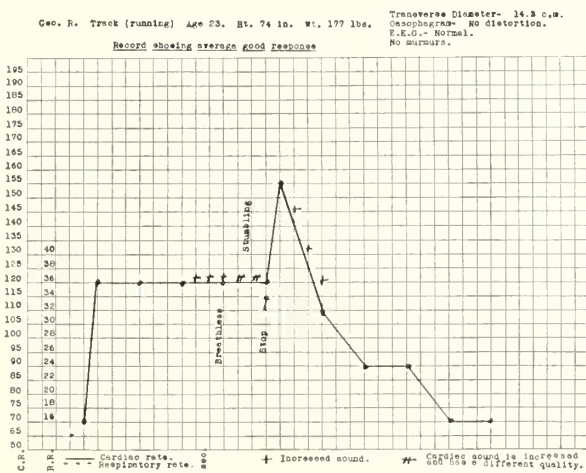


Fig. 1. A normal response to work in an individual with a normal heart.

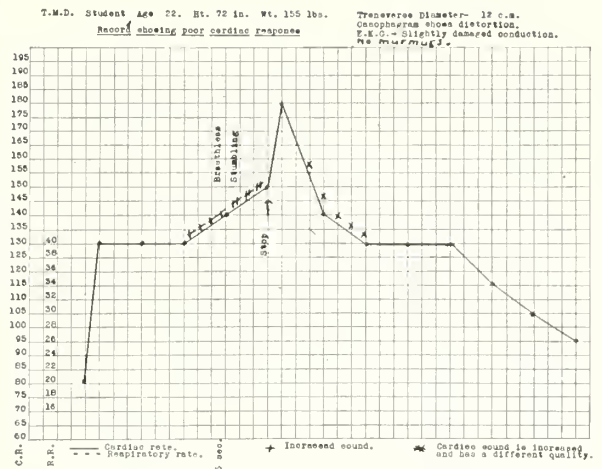


Fig. 2. A poor response to work in an individual, overweight and undertrained. Shows evidence of slight myocardial damage.

valvular defects. When these defects are well compensated and can maintain a normal circulatory response to exercise the heart gives a perfectly normal test; whereas those with poorly compensated valvular defects who, in spite of their increased rate on exercise, cannot maintain an increased output (for an acceleration of the pulse rate does not indicate an increased cardiac output but may indicate merely a demand for such an increase), give an abnormal test. There is a lack of increased intra-arterial pressure in the aorta and carotids due to a faulty cardiac output so that no vagus control is initiated to establish a normal working level of the pulse. In many cases this is probably aided by damaged conductivity of the heart muscle.

The rate continues to increase until the individual is exhausted and then drops as in the other two instances, again establishing a plateau of rest at 120 beats per minute, allowing the heart and circulation to readjust themselves after having maintained an excessive cardiac rate.

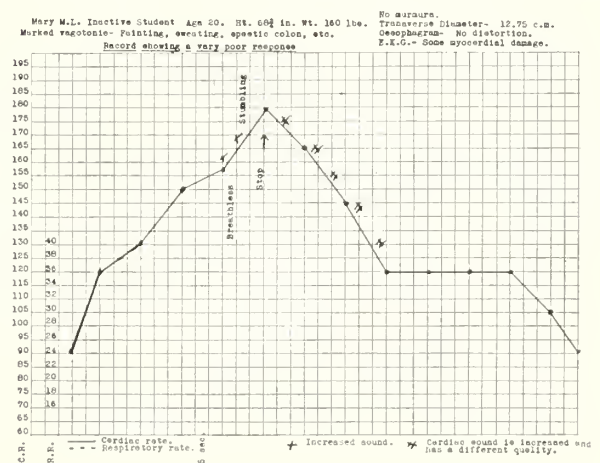


Fig. 3. A bad response to work in a vagotonic individual. The same type of response is found in myocardial disease and poorly compensated valvular disease.



We have made cardiac examinations of over 400 athletes. These examinations consist of a careful physical examination of the heart; cardiac measurements of the transverse diameter of the cardiac silhouette were made, these being compared with the Hodges-Eyster formula in reference to height and weight; the size of the posterior chamber of the heart (left auricle) was outlined by an esophagram and any distortion of the outline in the esophagus from left auricular enlargement was noted; and a fatigue test was done. All athletes examined had a blood pressure within normal range.

The results of this examination showed that something less than 10 per cent of our athletes had developed hypertrophy of the heart. The other 90+ per cent, watched through four years of university athletics, developed no hypertrophy.

In every instance where athletic hypertrophy was found the individual showed evidence of cardiac damage or of vagotonia, and nearly every one of them gave an abnormal response to the cardiac function test just described, the only exceptions being well compensated minor valvular defects. That is, in every instance in which there was cardiac hypertrophy it was possible to show that the individual suffered from vagotonia, had myocardial damage or a valvular defect that was well or poorly compensated. As the result of these defects he was unable to give a normal cardiac response to work as estimated by our cardiac function test, for we believe that the normal response of the heart to work is the establishment of a normal working pulse rate level in the near neighborhood of 120 beats a minute and, where that level is not found, we have a heart that does not respond normally to work.

As few physicians responsible for the health of athletes have at their command roentgen ray apparatus and electrocardiographs, and sometimes the training in cardiac examination that causes an accentuated cardiac first sound, or a short pre-systolic roll heard only in the prone position, to carry more meaning to them than a loud, blowing, systolic murmur at the apex, I feel that we have presented a means of examination in a cardiac function test that is easily done, is not time consuming and gives definite information regarding the ability of the heart to cope with work.

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#### DISCUSSION

DR. WILLARD BARTLETT, JR., St. Louis: Dr. Stine has given us a presentation that is not only of value as a study in clinical physiology but also points out a way to answer the question, "Does the circulatory apparatus respond normally to exertion?" This is of practical importance in that one must often decide whether a patient's activities should be decreased or increased.

In patients with goiter we are particularly concerned with the response of the organism as a whole to exertion. Many of you are familiar with our breath-holding test, from which such valuable information as to safety of operation is derived in highly thyrotoxic patients; this is essentially a measurement of ability to do a certain kind of work. At the other extreme of the disease we observe another kind of work response and it is to this test that I wish to direct your attention now as being pertinent to Dr. Stine's presentation. The particular situation under discussion is that of the patient with a goiter who is not obviously sick at the time of examination. He may be in one of four states physiologically: (1) normal thyroid function, (2) hyperthyroidism in remission (particularly if he has had treatment), (3) mild hypothyroidism, (4) a neurosis simulating either increased or decreased thyroid functional states. This is a situation that calls for the utmost accuracy in diagnosis for (1) if the patient has previously been hyperthyroid advantage should be taken of the present remission to remove the goiter; (2) if the patient has been hypothyroid he needs thyroid feeding whether or not thyroidectomy is performed; (3) if a neurosis is present it must be dealt with adequately regardless of the thyroid situation.

I should like to stress the view that exact differentiation in this situation challenges all one's resources, for a given patient may be in any one of these four physiologic states and have exactly the same resting pulse rate, blood pressure, basal metabolism and even blood cholesterol; this occurs because of the wide limits of "normal" individual variations. In earlier years we resorted to therapeutic tests (with iodine or thyroid

as seemed most hopeful) to help us resolve these problems. More recently we have found that certain of these patients respond quite differently to measured exertion than others and we can now report characteristic responses for each of these four groups; consequently, we only rarely resort to a therapeutic test with either iodine or thyroid medication and do so only to confirm an already definite diagnosis.

After performing some three hundred fifty tests we submit this technic with the summary of results. After at least fifteen minutes' rest in a chair the pulse rate and pulse pressure are determined several times and the lowest values recorded. The patient then hops twenty times on each foot by count extending from twenty-five to thirty seconds and immediately resumes his seat. Immediate observations are made of the pulse rate and pulse pressure and are repeated at one minute intervals for five minutes during recovery.

We find that: (1) Patients with normal thyroid function, with or without goiter, show a moderate immediate rise in pulse rate and pulse pressure, both returning to resting value in two to three minutes. (2) Goiter patients who are in a remission of hyperthyroidism (even with the basal metabolism below zero) show an exaggerated immediate response and a return to resting values delayed beyond three minutes in one or both phases. (Frankly thyrotoxic patients show a greatly exaggerated response and very prolonged recovery phase.) (3) Hypothyroid patients, with or without goiter, show a normal response. (4) Patients with neuroses such as neurocirculatory asthenia, effort syndrome and anxiety states, are very apt to show little or no elevation of pulse pressure or pulse rate in response to such exertion. Often a fall below resting values is seen in the recovery phase.

## ROLE OF THE PARASYMPATHETIC NERVOUS SYSTEM IN TRUE ENURESIS

ADRIEN BLEYER, M.D.

ST. LOUIS

Enuresis is said to exist when a child has failed to acquire control of his bladder by the age of 2. This has been ascribed to willful disregard, to imitation or to mental or physical defects. Great stress has been placed upon loss of inhibition as a fit and sufficient explanation of enuresis. Upon this foundation, the theory of discipline in enuresis was evolved.

Unfortunately, however, enuresis is a common disease among the finest children of the land in point of breeding as well as in physical and mental equipment. For this reason and others we have hesitated to subscribe to the idea of lost inhibition as the foundation of enuresis and suspect that quite often in this disease bladder control is actually lost and cannot therefore be restored by treatment directed to the mind.

Our studies have led us to divide enuresis into two forms: a true form, which we have called enuresis vera, and an imitative form which might be called pseudoenuresis. Treatment of the former

is directed to the bladder itself as the seat of the trouble, to a disturbance of its mechanism having nothing to do with any known extrinsic factor.

This conclusion was reached some years ago in a clinical study of eleven so-called causes of enuresis in which no relation whatever could be discovered between any of them and this disease.<sup>1</sup> Furthermore, since enuresis was seen as often in one sex as in the other its cause does not seem to reside in any anatomic or physiologic peculiarity of either sex external to the orifice of the bladder.

### THE PHYSIOLOGY OF MICTURITION

A discussion of enuresis from this point of view concerns the physiology of the bladder. Particularly I wish to recall an observation made some years ago by Dr. Hugh Young which was helpful in this study.

During a cystoscopy Young discovered things about bladder function which recall somewhat the observations of William Beaumont upon the living stomach of Alexis St. Martin. With the cystoscope in the urethra but not yet in the bladder, he directed his patient to urinate and saw that the posterior wall of the orifice had been pulled away. This observation was fundamental to present knowledge of bladder function for by it we learned that in urinating we do not relax the orifice as had been believed but rather we pull it open, the upward convexity of the trigone, as it passes through the orifice to insert in the deep urethra, disappearing as it tends toward a straight line and the bladder orifice assuming the form of a keyhole with the posterior wall pulled away. Thus by contraction of the trigone the weaker tonus of the sphincters is overcome and micturition is initiated. The mechanism is precisely the same whether stimuli reach the trigone by way of the voluntary system acting under the will or independently of it by way of the autonomic system.

Through the pelvic nerves of the parasympathetics, contraction of the trigone and the detrusor muscles is brought about. As part of this act there occurs a synchronous lowering of the tonus of the smooth muscle of the internal sphincter which is supplied by the hypogastric nerves of the opposing sympathetic system. As pointed out by Albert Kuntz, this action may be likened to the play of the muscles of a joint, of the flexors and extensors whose antagonism is forever yielding when at work. Stimuli bringing this mechanism into play reach the cord by way of the pudic nerve, an afferent-sensory nerve whose stimulation sets up a complete arc through the lumbar and sacral centers and is appreciated, under normal conditions, by the bladder center in the frontal lobe of the brain.

Lastly, and mysteriously enough, the voluntary nervous system seems to have no connection of its own to this group of muscles and sends its impulses over the pathways of the autonomic system, reaching the bladder by way of the pelvic nerves.

From the Enuresis Clinic, Outpatient Department, Washington University School of Medicine and the St. Louis Children's Hospital.

Read at the Annual Post-Graduate Course and Clinic Conference of the St. Louis Clinics, May 26, 1938.

<sup>1</sup> American Journal of Diseases of Children, 36:989-997 (November) 1928.



In this study various remedies were experimented with, fifteen in all. Comment will be made on three of these at this time because they seem to throw some light on the nature of this disease.

*Atropin.*—In various diseases where spasm of smooth muscle dominates the clinical picture atropin is often effective by virtue of its paralyzing action upon terminals of the parasympathetic nerves. Its effectiveness in a large majority of true type cases suggests that we are dealing in enuresis with a hyperexcitability of the parasympathetics. Again, atropin has the power, although to a less degree, of stimulating the central nervous system and increasing the voluntary control of the bladder through its action upon the terminals of this system lying in the external sphincter, the compressor of the urethra and the trigone itself. Thus atropin is a double-edged weapon in enuresis in that it both weakens the attack and strengthens the defense.

*Ether.*—The physiologic action of ether is essentially that of alcohol. It acts upon the central nervous system rather than upon the vegetative system, reaching sensory reflexes early. This is followed by gradual loss of cerebral inhibition. Motor reflexes are involved late and the medullary centers last. In many respects the action of ether is the exact opposite of that of atropin.

The purpose of this experiment was to find the effect of small doses of ether upon the sensory mechanism of the bladder by lowering or limiting the play of the voluntary system which contributes to the defensive mechanism of the bladder and in conjunction with the sympathetic system is antagonistic to the parasympathetics.

A 25 per cent solution of anesthetic ether in olive oil was used, a teaspoonful or two for each year of age, administered rectally upon retiring. The effect was unexpectedly prompt; most of the children became worse and remained so throughout the effect of the ether. Ether thus appears to simulate sleep in that it may assist in removing the restraint of the voluntary system and in this way furnish a valuable hint, if only a hint, concerning the nature of this disease.

*Massage.*—Massage of the bladder is often effective in enuresis. One is greatly impressed with the sameness of the pattern which recovery takes, and when this experience has been repeated a number of times it becomes clear that we are not dealing with a mental reaction but rather that the finger has invaded an area intimately related to the disease.

In carrying out this simple procedure there is no difficulty as a rule in enlisting the cooperation of the child, and there is of course no pain connected with it. The gloved finger is inserted rectally as the child lies prone and passed without firm pressure over and around the trigone region for a minute or two. This is repeated at intervals of one, two or three days. In day enuresis patients, where urgency at short intervals is pronounced, massage is remarkably effective and should always be done be-

fore any other treatment is tried. Results come, if they are to come at all, almost at the beginning of treatment which is never given more than three or four times. The child's manner and behavior, his elation over regaining control of his bladder, as well as the report of the parent, tell the story of cure; and where the first massage has helped, even a little, you may be reasonably sure that it will be followed by more or less complete relief.

To determine the possible effect of this procedure upon the mind, chiefly to satisfy a number of doubting Thomases around the clinic, a somewhat tedious check-up was made. Three procedures were carried out, i. e., dilatation of the anal sphincter, passing urethral bougies, and the Thompson method of distending the bladder with a column of water and requiring the child to force it back again. None of these did any good either on the bladder or the mind although certainly as capable as massage of reaching it. It is reasonable to conclude that the benefits of massage are not secured in this way.

#### CONCLUSIONS

We suspect that enuresis may to advantage be divided into a true form and an imitative form for which the terms enuresis vera and pseudoenuresis are proposed.

Pseudoenuresis belongs to the psychologist; it has the ear marks of a true behavior problem. These are the children who cease wetting themselves during a stay in the hospital and resume it when they return to their own homes. They constitute a large proportion of the so-called enuretics of orphanages and boarding schools. About a third of the delinquent children in the juvenile detention quarters in St. Louis are inveterate wetters. This is out of all proportion to that normally found in the child population at large.

Such cases should be distinguished from true enuresis where discipline plays a negligible and unimportant part. In our work it was found best to ignore discipline altogether in the treatment of enuresis.

No explanation of enuresis has yet been made. There is no known pathology nor any known factor other than age. It is not a true neurosis nor is it the result of any known mental or physical defect. It is not adequately explained as a loss of inhibition. Much, very much, more probably inhibition is not impaired in children suffering with true enuresis. In this disease we are dealing with a child who must urinate at once because, despite the best of intentions and self control, the trigone through the play of the parasympathetics is tintillating the orifice or has already pulled it open and the child must urinate at once because he is already doing so.

The role of the will which stresses of course the dominance of the central nervous system has received the lion's share of attention in this disease. Too much emphasis has been placed upon it. We believe, to the contrary, that the will plays no part in true enuresis nor should we expect a child to

exert it adequately in the presence of what we have reason to believe is an imbalance between the sympathetics which provide the defensive control and the parasympathetics which provide the motivating systems of the bladder. Whether the former is weakened or the latter is hyperexcitable is not known. The evidence at hand seems to point to the latter and we are inclined to interpret true enuresis as the result of a parasympathetic preponderance.

University Club Bldg.

## INFANT FEEDING

SOME PRACTICAL SUGGESTIONS

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For many years physicians have been experimenting on a milk formula which would agree with all infants. Such a formula is not practical as all infants differ in digestive ability, constitutional makeup, metabolic rate, glandular function and mainly environmental state.

Cow's milk, which is the most available milk, has been modified in a thousand ways, yet no one formula has been universally successful with all infants. To my mind the most essential necessity for successful feeding is the boiling of the milk. In former years lime water was added to milk to prevent curd formation. Boiling has replaced this procedure. The longer the milk is boiled the easier it is digested. Boiling or superheating milk makes it safe from contamination, that is, it is sterile; and the heating breaks up the fat and protein making it more easily digested. In other words raw milk is unsafe and difficult to digest; pasteurized milk is safer and more easily digested, boiled milk is better, and the best is condensed or powdered milk. Do not misunderstand me. Some infants will do well on almost any kind of milk formula but such infants are in the minority.

Marriott often said and taught us that the majority of infants will do well using cane sugar in their formulas. If they do not do well, then use a nonfermentable sugar. Is it wiser to use a nonfermentable sugar with all infants at the start and change to the less fermentable sugar if it does not agree? There is a small percentage of infants that do not do well on any form of milk or sugar, not because of the milk formula but because of the constitutional peculiarity of the infant as poor metabolic balance, nervous instability or an inherited allergic condition. Zierny designated these allergic states as "exudative diathesis." Morse called this a fanciful name which covers our ignorance of the true nature of the condition. Practically speaking, these are inherited constitutional weaknesses over which we have little influence. The physician gets the blame for the food not agreeing with the infant. As a matter of truth, it is the infant who does not agree with the food.

The most important essential in starting an infant on a formula is to begin with a dilute mixture. This perhaps does not satisfy the infant but it stimulates an appetite and prevents vomiting. It also prevents loose stools of undigested material. Naturally an infant cries and is constipated, which is a great worry to the mother. An infant must have a bowel movement daily. Nature is a very clever doctor.

Infants on the breast frequently have colic for three months which is really nothing but hunger. The mother has not adjusted herself to the infant nor the infant to the mother. It is simple to put this infant on a supplemental feeding and satisfy the mother and grandmother. Is this the best procedure?

In one locality one type of milk is used with success. In various localities certain milks are thought to be superior to others. This is merely prejudice. Of course, there are a few milks which are not advisable but even these are good in certain types of feeding difficulties; however, they must be carefully regulated and changed at the proper time. The important thing is to select a recognized milk and adjust the milk to the infant, beginning with a weak formula and a small quantity and rapidly increasing the strength and quantity according to the tolerance capacity.

In previous years infants were fed nothing but milk until they were from 8 to 10 months old. Now they receive cereals at 2 months, vegetables at 3 or 4 months and beef steak at 6 months.

In other words we are reverting to the practices of our grandparents, giving the infants a taste of this and that at an early age. Do not misunderstand me. An infant's digestive ability is weak and one should use discretion in the selection of the proper food. It is thought that the second summer is dangerous and hazardous. Why? Because past experience has shown us that it is not the second summer but because the mother and father think the baby is old enough to eat everything on the table. The older a child becomes the less danger of a digestive upset if one uses common sense in selecting the foods offered.

Milk is an essential in an infant's diet but its importance is much overemphasized. A quart of milk a day was advocated by dairy men, not physicians. Milk is essential for the first six months of life but after that it is not essential. Mothers continually come to me stating that the child takes his quart of milk a day but does not eat. When the milk is omitted the child immediately improves in health and appetite.

Now as to breast feeding. The infant cries, is hungry; what shall we do? Put the infant on a formula. Immediately the infant ceases crying, is a better satisfied child and all is well. As a matter of fact if the mother would not be so impetuous and anxious the physician would not change the infant to the bottle so quickly. A bottle baby does beautifully for the first four to six months then the ebb



comes; whereas, with the breast infant, the first three months are the trying ones and after that the results are apparent. If it were possible to make mothers realize the importance of breast milk, irrespective of the crying, a much stronger child and a healthier mother would be the result. When a patient has appendicitis, gallstone colic or renal colic, it is miraculous to give a dose of morphine to repress the pain. That satisfies the patient but is that the best for the patient? It is, as I said, very simple to put an infant on the bottle. Almost any formula will satisfy the infant temporarily but is this temporary procedure the best? It is granted that some mothers truly are unable to nurse their infants, but the majority of mothers do not have enough patience to try to nurse their babies.

The only possible solution, as I see it now, is to have a continuous campaign of advertising in magazines and papers, giving the public the real advantages of breast milk feeding. This would be difficult because there is no commercial phase to this advertising as with other milk products which must be bought from the drugstore or grocery store. The proper procedure is to take the road of least resistance and put the infant on the bottle the first night the mother and father have to walk the floor.

In summarizing let me say that breast milk is the milk of choice but mothers are too anxious to put their infants on the bottle. There are many milk products to use in supplemental feeding, 95 per cent of which are safe and easy to adjust to the infant. The secret of successful feeding of cow's milk is boiling the milk. With young infants the important requirement is to make the formula not too strong in the beginning, and not to feed the infant too large a quantity. Build up the infant's tolerance for the food chosen. Also begin solid foods early.

201 Plaza Theatre Building.

#### AIR FILTRATION

According to Tell Nelson, Chicago (*Journal A. M. A.*, Oct. 1, 1938), air filtration implies the removal of impurities, usually in the form of dust, from the air. The benefits derived from such treatment of the air are of great importance in industry as well as in the control of many respiratory diseases. No air is free from dust. The concentration of dust particles in the air depends on the conditions operative in the locality in which samples are taken. The direct effect of dusts on health depends to a large extent on their chemical composition and the size of the particles. In persons who are sensitized to pollens, inhalation of air impurities precipitates symptoms of hay fever and pollen asthma. The concentration of pollen in the air varies greatly in different localities and is often enormous. In Chicago, for example, it has been shown that hundreds of tons of ragweed pollen are liberated each season. Many mechanical devices have been built for removing dusts from the air. However, because of the large variety of dust, their difference in size and chemical composition and the varying conditions under which they are found, there is no single filtration method which is applicable to all. The main object is to remove as nearly 100 per cent of the dust as is possible. Air cleansing may be accomplished in numerous ways. In general the methods can be roughly grouped into five main divisions:

air washers (water sprays), dry filters, viscous coated filters, electrical precipitators and dynamic precipitators. Each method has a definite field of usefulness and when used within its own limitations attains its maximal efficiency. In industry, the dynamic and electrical precipitators are perhaps the most efficient for the removal of the smaller particles of dust, whereas for home and hospital use dry filters are most efficient. The air washer for the removal of dust and pollen from air does not have as high a degree of efficiency as other methods. The greatest field of usefulness of the air washer is as a primary cleaner in a system in which there is a secondary filter of greater efficiency. In this capacity it will remove the larger particles and thus give a longer life to the secondary filter in addition to maintaining or increasing the humidity. Dry filters are well adapted for installation in hospitals and homes where filtration is required. Their efficiency is at its maximum when the filter is new. When properly cared for under ordinary operating conditions, the loss in efficiency of dry filters is very slight. Viscous coated filters have their lowest efficiency for dust arrestment when new, but as the filter fills with dust the efficiency increases. Electrical precipitators have lately been advocated for use in the removal of dust and pollen from the air. They maintain a high degree of efficiency for dust removal. This method is efficient for particles smaller than 0.5 micron. Its disadvantages for home and hospital use are that it may liberate ozone, which at times may produce secondary effects, and it requires constant operation to maintain its efficiency. Dynamic precipitators usually combine an exhaustor and dust collector in a single unit. The dynamic precipitator has a very high degree of efficiency for dust removal as the result of the magnitude of the centrifugal and dynamic forces imparted to the dust particles by the impeller. Within the past ten years, filtration of air for the removal of particulate matter has received a great deal of attention from the medical profession. This has been particularly true in the field of allergy. Its usefulness in the relief of symptoms of hay fever and pollen asthma and in other inhalant allergies as well as its value as an aid in diagnosis has been amply demonstrated.

#### THE PHARMACOPEIA AND THE PHYSICIAN: LOCAL URINARY ANTISEPTICS

In this study Henry W. E. Walther, New Orleans (*Journal A. M. A.*, Oct. 15, 1938), reviews the most important of the local urinary antiseptics in use and evaluates their usefulness in the separate portions of the urinary tract. He discusses acute and chronic urethritis, acute and chronic cystitis and acute and chronic pyelitis (pyelonephritis) in relation to the appropriate local antiseptic treatment of each. The substances used in local antiseptic treatment of the urinary tract fall into groups of (1) mercurials, (2) silver salts, inorganic and organic, (3) dye therapy and (4) chemotherapy, although the members of these groups overlap at some points. In addition there are such time-honored remedies as potassium permanganate, boric acid, phenol, cresol, trinitrophenol (picric acid) and various other more or less widely used drugs. In the application of local antiseptics to disorders of the urinary tract it is necessary to destroy the infecting micro-organisms and stimulate a reaction in the tissues of the patient which will enable him to offer the necessary resistance to the infection. It is not so much what particular agent is employed for this purpose as how it is employed. The clinician must ever be on guard against the use of antiseptic solutions so strong as to destroy the tissue he aims to preserve. Any substance sufficiently potent to kill bacteria outright also kills the tissue harboring those organisms. Only by using the mildest solutions consistent with effectiveness can he hope for the desired results.

# THE JOURNAL

of the

## Missouri State Medical Association

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NOVEMBER, 1938

### EDITORIALS

#### POSTGRADUATE INSTRUCTION

Postgraduate instruction has been an important factor, almost a basic factor, in organized medicine. While other phases of professional activity have necessarily taken their places, still postgraduate instruction maintains its prominence with the profession. With few exceptions have physicians met as an organized group when instruction was not the reason or an important part of the session. This is true of the national organization, the American Medical Association, the state associations, the county medical societies, special societies, the meetings of the hospital staff.

The reason is obvious. Medicine has been and is a rapidly advancing science. Regardless of the training of the physician he must study constantly to keep abreast of advancement.

The work of the Committee on Postgraduate Course of the Missouri State Medical Association is to furnish instruction to members of county societies. Originally this was the only committee of the Association which handled this work. As medical science advanced, it became necessary to have committees on specific disease problems and these committees have furnished speakers on the specific subject with which their committee dealt. As a consequence the correlation of postgraduate instruction became necessary.

To effect this the Postgraduate Committee recommended to the House of Delegates at the Jefferson City Session that all lectures and instruction work be correlated under a Postgraduate Correlating Committee and a definite plan adopted whereby instruction to physicians could be of most value. The House adopted the recommendation. This need was also stressed by a representative of the American Medical Association Council on Medical Education and Hospitals while surveying postgraduate instruction in Missouri. This representative also stressed, as did the Postgraduate Committee, the necessity of county medical societies reporting the number present at meetings of the society or

lay meetings sponsored by the society, together with a full report of the meeting.

As a result a Postgraduate Correlating Committee has been formed and is ready to institute a plan which it feels will be of invaluable benefit to physicians and it is hoped that physicians will take every advantage of this work.

The plan of the Committee appears on page 454 of this issue under "Organization Activities."

#### STIMULATION OF HEALING

Medical historians have generally been interested in the discovery of the therapeutic principle present in the successful herb remedies of earlier generations. Among the better known of these remedies is digitalis found in the foxglove tea of an old Shropshire woman. Perhaps entitled to a position of lesser fame is comfrey root, long esteemed by the European peasantry for its healing properties. It has been found that this root is rich in allantoin, a product of purine metabolism having the property of stimulating granulation tissue growth.

In 1930 Baer first described the remarkable therapeutic effect of live maggots upon suppurative osteomyelitis. The healing so mediated is believed to result from the debriding abilities of the living maggots as well as from their excretory products. Robinson<sup>1</sup> attributed the phenomenon to the allantoin formed by the passage of urinary uric acid through the alkaline intestinal tract. He was able to demonstrate satisfactory wound healing through direct application of this agent in a series of stubbornly resistant infections. It produced an abundant growth of healthy granulation tissue. Since it may be obtained from many plant and animal sources at low cost allantoin would appear to offer certain definite advantages in promoting wound healing.

On the whole there seem to have been few reports, either confirmatory or condemnatory, in the literature which might serve to allocate this therapeutic agent to its proper position in the armamentarium. Livingston<sup>2</sup> believes the healing substance is not merely allantoin as suggested by Robinson nor calcium picrate as believed by others. He writes that "maggots are complex organic substances which, because of their embryonic nature, are growth stimulating." Maggot extract he considers to be a complex radical composed of organic embryonic substances, calcium, carbonate, allantoin and the sulfhydryl radical, all possessed of growth stimulating properties. He treated 567 cases of osteomyelitis and other chronic infections. The exhibition of living maggots or maggot extracts, sometimes in conjunction with vaccines, brought about cure in 88 per cent. The degree of success so attained was 38 per cent greater than in a series of control cases treated by other methods. Unfor-

1. Robinson, W.: Stimulation of Healing in Non-Healing Wounds, *J. Bone & Joint Surg.* **17**:267, 1935.

2. Livingston, S. K.: The Therapeutic Active Principle of Maggots, *J. Bone & Joint Surg.* **18**:751, 1936.



unately he supplies no information relative to the methods used in the control series and from the critical point of view his report leaves much to be desired.

More recently the same investigator<sup>3</sup> has reported unusual success in the treatment of a wide variety of commonly encountered diseases. Abscess, furuncle and carbuncle, burns, fistulae, fissures, hemorrhoids, indolent ulcers, even the lowly athlete's foot, all are said to respond to maggot extract. Although presented only as a preliminary account here again details are conspicuously lacking. Altogether Livingston included 306 cases in this report. In this series he employed a grease-free surgical jelly containing 5 per cent maggot extract.

Healing is frequently slow. It may lengthen hospitalization. Even in the ambulatory patient full resumption of all duties may be prevented by delayed wound healing. Further experience is greatly needed to determine the virtues of the preparation extolled by Livingston. Wide trial under suitably controlled conditions with an adequate number of cases cared for according to accepted methods is urgently needed.

Experience has time and again dashed the fallacious joy of medical discovery. Yet each new method is entitled to trial under a wide variety of clinical conditions. Increasing experience tends to relegate most of these cure-alls to a position of unimportance. But the possibility remains that one of them will actually possess all the virtues that its discoverer enthusiastically claims for it. If maggot extract in a jelly base will promote healing to the extent suggested by Livingston, then indeed a new and valuable addition to the therapeutic armamentarium will have been made. Until the supposition is proved commendable caution should surround the use of the preparation.

## FLYING AND THE CORONARY SYNDROME

Recent achievements in aviation and the promise of regular stratosphere flights again focus attention upon the physiological adaptation to diminished oxygen pressure. From the point of view of the aviator many mechanisms are involved in the determination of his fitness to fly. From the point of view of the passenger only one is of primary importance, that is the effect of altitude upon the oxygen saturation of his blood, for it is well recognized that a deficiency of oxygen in the blood, even though it be present in the atmosphere, leads to death. Even though it be present in amounts sufficient to maintain life the air pressure may be so little as to preclude its entrance into the blood stream. Flights above 40,000 feet demand not alone that oxygen be supplied to the participants but that the total air pressure must be great enough to prevent this vital gas from oozing out into the surrounding ether.

At sea level oxygen constitutes about 21 per cent of the atmosphere. It exerts a partial pressure of

approximately 159 mms. Hg. in the upper respiratory passages of the individual. In these areas it participates in no physiologic activity. Even the deepest possible inspiration does not lead to a complete change in alveolar air, the result of the large "dead space" of the respiratory passages as well as of the mechanical arrangement which precludes through and through ventilation. In consequence, at sea level the partial, that is the effective pressure of oxygen in the pulmonary alveoli, is approximately 100 mms. Hg. As this pressure diminishes the body is able to maintain satisfactory equilibrium until an alveolar pressure of 40 mms. Hg. is reached. Below this point the oxygen saturation of the blood falls rapidly. Under actual flying conditions<sup>1</sup> such a lowered oxygen pressure is not likely to be encountered unless altitudes of from 30,000 to 35,000 feet are reached. Nevertheless, altitudes of 20,000 feet are rarely exceeded without some degree of discomfort even to experienced aviators.

Flying differs fundamentally from living at high altitudes. In the latter instance acclimatization may take place, mediated largely by increase in hemoglobin and red cell count and leading to greater oxygen retention in the blood. In the former acclimatization does not occur because under ordinary conditions flight is not maintained at these high altitudes except for short periods of time. In experiments with rabbits it has been shown that although an apparent acclimatization to high altitude for short periods of time may be induced, this is followed by rapid deterioration and even death. Human beings with coronary sclerosis exposed to diminishing oxygen pressure may suffer a typical anginal attack.

On the basis of known facts in regard to the effect of altitude it might seem that the cardiac patient should not fly. The whole subject was considered at the 1937 meeting<sup>2</sup> of the Aero Medical Association. All the participants agreed that the patient verging on decompensation should not be allowed to fly. Neither should he be allowed to walk. The increasing part that air transport plays in modern economic life makes clarification of the question of the flying latitude to be allowed the cardiac patient important. Business men often find the use of airplanes indispensable to the conduct of their affairs. It is in this class of persons that mild forms of heart disease are so frequently encountered.

Most commercial airplane flights are made at heights of between 6000 and 8000 feet above sea level. Even in the mountains it is rarely necessary to exceed 10,000 feet for longer than short periods of time. The passenger sits quietly in a seat, exerting no energy such as might be required by mountain climbing. He may readily compensate for the slight diminution in oxygen pressure met at altitudes such as those through which he flies. Of much more importance than oxygen pressure, although seemingly

1. Bauer, L. H.: *Aviation Medicine*, Baltimore, Williams & Wilkins, 1936.

2. Bishop, L. F.: Is It Safe for the Heart Patient to Fly? *J. Aviation Med.* 9:3, 1938.

3. Livingston, S. K.: Maggot Jelly, *Am. J. Surg.* 41:49, 1938.

secondary, is the emotional reaction of the passenger. Some insist that they cannot stand altitude flying and get sick as soon as a certain elevation is reached. An amusing story was told at the conference of a woman who developed substernal pain at an altitude of 10,000 feet. Accordingly the pilot put the plane into a slight descent. In a few minutes the ailing passenger was informed that she had descended 2000 feet. She expressed appreciation for the prompt relief of her symptoms. Actually the plane had descended only 200 feet.

During the discussion at this conference it was brought out that only one death from coronary thrombosis is known to have occurred to a passenger in transit. In that instance it was asserted that flying did not contribute to the death. Mention was made of several patients who had recovered from coronary thrombosis and who flew with perfect safety. At least one such patient piloted his own plane. Thus far there has been no statistical evidence that might be brought to bear upon this subject. One airline alone has carried over three quarters of a million passengers. The total carried by all lines must be several times that number. While inexact indeed the conclusion is inescapable that ordinary flying is not dangerous to the patient with compensated cardiac disease.

A high degree of emotional stability must be inculcated upon the patient with cardiac disease to permit his continued participation in the affairs of life. Flying of itself is entirely harmless except as it affects the serenity with which the patient faces the hazards of this experience. Equanimity becomes the keynote to his continued existence whether on or above earth.

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## NEWS NOTES

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Drs. E. Lee Dorsett and O. P. J. Falk, St. Louis, were guests of the Perry County (Illinois) Medical Society at DuQuoin, Illinois, October 6. Dr. Dorsett spoke on "Complications During Labor" and Dr. Falk discussed "Modern Therapeutics."

Dr. Vilray P. Blair, St. Louis, was recipient of the distinguished service award of the Mississippi Valley Medical Society at the annual session of the society September 28 to 30. The award is made annually to a physician "who has rendered unusual and distinguished service to the medical profession." The award is a gold medal and a certificate of award.

Application blanks are now available for space in the Scientific Exhibit at the St. Louis Session of the American Medical Association, May 15 to 19, 1939. Attention is called to the fact that the meeting is a month earlier than usual, and applications close January 5, 1939. Blanks will be sent on re-

quest to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

The Southeast Missouri Medical Society held its sixty-second annual meeting at Poplar Bluff on October 11 and 12 with Dr. H. M. Henrickson, Poplar Bluff, presiding. Dr. George W. Vinyard, Jackson, the only charter member of the society now living, was present. A banquet was held at the Dunn Hotel on the evening of the first day, after which members and guests were entertained at the Country Club by the Butler County Medical Society. Members were guests of the Kiwanis Club for lunch on the second day. Excellent scientific papers were presented during the two days. Officers elected were: President, Dr. B. J. Macauley, Poplar Bluff; vice president, Dr. D. E. Smith, Bonne Terre; treasurer, Dr. John D. VanCleve, Malden; recording secretary, Dr. J. J. Bredall, Perryville; corresponding secretary, Dr. M. H. Shelby, Cape Girardeau. Dr. R. C. Kitchell, Sullivan, will finish out his fifth year as recording secretary and Dr. Bredall will assume the duties at the next annual meeting. The next meeting will be held in Cape Girardeau in October, 1939.

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Gilliland Laboratories, Inc.

Diphtheria Toxin-Antitoxin Mixture, 0.1 L+  
(Goat)

Jensen-Salsbery Laboratories, Inc.

Antianthrax Serum

Lederle Laboratories, Inc.

Typhoid Combined Vaccine, 20 cc. vial package

Eli Lilly and Company

Ampules Pentobarbital Sodium—Lilly, 7½ grains (0.5 Gm.)

Protamine, Zinc & Iletin (Insulin, Lilly), 80 units, 10 cc.

The National Drug Company

Staphylococcus Toxoid

Parke, Davis & Company

Antipneumococcic Serum (Felton) Type II, Refined and Concentrated

Soluble Gelatin Capsules Parke, Davis & Company's Standardized Cod Liver Oil, 2.0 Gm.

E. R. Squibb & Sons

Immune Globulin (Human) (Placimmunin)

Protamine Zinc Insulin—Squibb, 80 units, 10 cc.

The Upjohn Company

Capsules Ephedrine Sulfate, ⅜ grain (0.025 Gm.)

Capsules Ephedrine Sulfate, ¾ grain (0.05 Gm.)

Ampoules Ephedrine Sulfate, ¾ grain (0.05 Gm.)

John Wyeth and Brother, Inc.

Tablets Nicotinic Acid, 50 mg.

Tablets Nicotinic Acid, 100 mg.



The following members accepted invitations of the Postgraduate Committee to deliver addresses at recent meetings of component societies:

Drs. J. L. Johnston and Anderson Nettleship, Springfield, were guests of the South Central Counties Medical Society on August 25. Dr. Johnston spoke on "Allergy," and Dr. Nettleship on "Hypertension." Mr. E. H. Bartelsmeyer, St. Louis, was a guest of the Society on September 29 and spoke on "The Attitude of the Medical Profession Toward the National Health Program."

The Nodaway County Medical Society had as guest at its first meeting in September at Maryville, Dr. F. G. Thompson, St. Joseph, who spoke on "The Cancer Situation With Special Reference to Cancer of the Thyroid Gland."

On September 8 the Adair-Schuyler-Knox-Sullivan-Putnam Counties Medical Society had as guests Drs. Andy Hall, Jr., and Fred Kramer, St. Louis, at Edina. Dr. Hall spoke on "Prostatic Obstruction" and Dr. Kramer discussed "Gastro-Intestinal Obstruction."

The Jasper County Medical Society had as guests at Joplin on September 27 Dr. Carl F. Vohs, St. Louis, and Mr. E. H. Bartelsmeyer, St. Louis. Dr. Vohs spoke on "Medical Economics," and Mr. Bartelsmeyer on "State Medicine."

Drs. M. Pinson Neal and C. R. Bruner, Columbia, were guests of the Phelps-Crawford Counties Medical Society at Rolla on October 10. Dr. Neal spoke on "Pneumonia" and Dr. Bruner on "Sinusitis."

The Eighth Councilor District had as guests at a meeting in Joplin on October 20 Drs. Frank D. Dickson and Donald F. Coburn, Kansas City. Dr. Dickson talked on "Roadside Emergency Care and Highlights on the First Dressing," and Dr. Coburn spoke on "Head Injuries."

## ORGANIZATION ACTIVITIES

### ASSOCIATION'S POSTGRADUATE AND HEALTH EDUCATION ACTIVITIES CORRELATED

A plan for correlating committee activity in postgraduate instruction for physicians and health education for the laity was effected by chairmen of the various committees of the Missouri State Medical Association at a meeting in St. Louis on October 13. This action was in accordance with the recommendation of the Committee on Postgraduate Course adopted by the House of Delegates at the Jefferson City Session.

The new Postgraduate Correlating Committee is composed of chairmen of the following committees of the Association: Postgraduate Course, Dr. C. H. Neilson, St. Louis, Chairman; Cancer, Dr. D. A. Robnett, Columbia; Conservation of Eyesight, Dr. C. P. Dyer, St. Louis; Fractures, Dr. M. L. Klinefelter, St. Louis; Health and Public Instruction (McAlester Foundation), Dr. A. R. McComas, Stur-

geon; Maternal Welfare, Dr. Ralph R. Wilson, Kansas City; Medical Economics, Dr. Carl F. Vohs, St. Louis; Mental Health, Dr. G. Wilse Robinson, Sr., Kansas City; Publication, Dr. Walter Baumgarten, St. Louis; Physical Therapy, Dr. A. J. Kotkis, St. Louis, and Control of Syphilis, Dr. G. V. Stryker, St. Louis. Dr. John W. Williams, Assistant State Health Commissioner, attended the meeting.

The report of the Committee on Postgraduate Course approved by the House of Delegates at the Jefferson City Session was reviewed as it appeared in the July, 1938, issue of *THE JOURNAL*, page 265. It was pointed out that scientific meetings were being encouraged through joint sessions of the county medical societies in a respective councilor district or by several of the smaller societies meeting jointly, thus assuring the speaker of a reasonably well attended meeting.

It was noted that a part of the function of many of our committees was to furnish speakers, either on request or as a part of a state wide program, to appear before county medical societies or sponsored lay audiences. While a part of this educational activity was conducted with the cooperation of the Committee on Postgraduate Course, yet in most instances each committee acted independently of the activity of the other committees interested in the field of health education. As pointed out in the annual report of the Postgraduate Committee, early in the year a representative of the Council on Medical Education and Hospitals of the American Medical Association conducted a survey of the Association's postgraduate and health educational activities. The Council on Medical Education and Hospitals definitely recommended a correlation of all committee activity. Particular stress was given to recording attendance at both scientific and lay meetings. Records of attendance were kept on a specially conducted program to high school and college students on the topic of "Appendicitis." Approximately 16,000 students were addressed on this topic by speakers representing the Association. While each committee reports its activity in general to the House of Delegates annually, it is difficult to secure a composite picture of the extent of the Association's activity in educational work.

The Committee reviewed the action of the House of Delegates of the American Medical Association at the San Francisco Session in approving a plan of health education on preventive medicine which had been adopted by the Indiana State Medical Association. The resolution was approved in principle as follows:

WHEREAS, A pressing need exists for the development of a national policy on the part of organized medicine to bring the benefits of preventive medicine to all the people; and

WHEREAS, The medical profession, through its local county and state medical societies, already has made tremendous progress in developing programs local in scope; and

WHEREAS, A program of professional and lay health education is now functioning successfully in Indiana; and

WHEREAS, The profession in controlling tuberculosis, malaria, typhoid, diarrhea, yellow fever, puerperal sepsis and other infectious diseases has been largely responsible for the present favorable morbidity and mortality rates; and

WHEREAS, It is essential to make preventive medicine an integral part of organized medicine and individual private practice; and

WHEREAS, In order to put into immediate action at this session of the House a suggestion so ably stated on numerous occasions that "the attention of state and county societies should be drawn to the opportunity of assuming a definite leadership in the respective states and counties and directed with the best ideals of medicine and the best interests of the public"; therefore be it

Resolved, That the House of Delegates of the American Medical Association approves in principle the Indiana plan, a copy of which follows, of health education and preventive medicine and directs the Bureau of Health Education of the American Medical Association to bring this plan to the attention of the medical profession and the lay public through all available channels.

A unified or correlated program for health education was unanimously endorsed by the Postgraduate Correlating Committee. In carrying out such a correlation of activities the following principles were adopted:

1. The selection of an appropriate topic each month, either a specific disease or a health problem of paramount public importance. This topic is to be emphasized in *THE JOURNAL* by the publication of two or more original articles on the topic selected. Beginning with the December issue, the topics for the months thus far selected are:

December, "Pneumonia."

January, "Highway Accidents."

February, "Syphilis."

March, "Maternal and Infant Care."

April, "Diphtheria."

Each county medical society is requested to discuss the topic of "Pneumonia" at a meeting in December and likewise the topic selected for each of the respective months following. It is suggested that the officers of each county medical society responsible for scientific presentations immediately arrange for the discussion of the monthly topic selected. Obviously speakers cannot be provided for all county medical societies monthly. In most instances members can be selected locally to discuss the topic. The articles published in *THE JOURNAL* on the respective topic for the month will be of invaluable assistance in this respect. However, during the year speakers can be supplied at intervals to well arranged county medical society meetings. In this connection, in order to assure a well attended meeting, adjoining smaller county societies could arrange to meet jointly. A meeting of the county societies in a respective councilor district is of course preferable when circumstances permit such arrangement. The topics for the remainder of 1939 will be announced in ample time for county societies to make use of them in preparing programs so that each member can prepare himself to discuss the subject.

2. Continued cooperation with the State Board

of health in presentation of scientific and preventive health programs to physicians and lay audiences. The cooperation of each county medical society in the state wide program of lectures on obstetrics and pediatrics sponsored jointly by the State Board of Health and the Association cannot be too strongly emphasized. These lectures provide a medium of giving the public the benefit of health education in maternal and infant care from a reliable source, and this is as it should be.

Syphilis is the topic for the month of February. The articles in *THE JOURNAL* will not only deal with treatment of the disease but also with the plan established by the State Board of Health for the Control of Syphilis. With a thorough understanding of the state wide plan for its control, the complete cooperation on the part of every physician will do much toward the control of syphilis in Missouri.

3. The plan will not interfere with the activity of individual committees. That it will accomplish the objective of the various committees to encourage discussion of topics in their respective fields of medicine is obvious. Requests for speakers on other than the topic of the month will receive the attention of the Committee on Postgraduate Course as in the past. Headquarters office is the clearing house for all committee activity. The number of persons in attendance at all meetings, scientific or lay, is to be reported routinely by the secretary of the county medical society to the Association office.

4. A policy already established wherein a designated speaker for a scientific program will also address a lay meeting on the topic selected on request of the county medical society will be continued. Continued cooperation will be given to the Woman's Auxiliary committee on public relations.

5. Publicity and press releases on preventive health educational activity will be under the direction of the Committees on Postgraduate Course and Publication, utilizing the facilities of the headquarters office and *THE JOURNAL* in cooperation with the respective committees of the Association and the county medical societies.

The following excerpt from the report of the Committee on Postgraduate Course adopted by the House of Delegates at the Jefferson City Session is emphasized:

"We believe that through such correlated activity we can successfully demonstrate to the public that individual practitioners of medicine are being thoroughly instructed and informed on the latest methods of medical progress and that there is no need for a change from individualistic enterprise to socialistic enterprise."

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#### NATIONAL HEALTH PROGRAM

The Committee authorized by the House of Delegates of the American Medical Association at the special session held in Chicago September 16 to 17 to confer and consult with proper federal authori-



tics on the National Health Program will confer with the Interdepartmental Committee including the Technical Committee on Medical Care in Washington on October 31.

On authorization of the House the Speaker appointed this Committee as follows: Dr. Irvin Abell, Louisville, Chairman; Dr. Walter F. Donaldson, Pittsburgh; Dr. Walter E. Vest, Huntington, West Virginia; Dr. Henry A. Luce, Detroit; Dr. Fred W. Rankin, Lexington, Kentucky; Dr. Frederic E. Sondern, New York City; Dr. E. H. Cary, Dallas, and ex officio, Dr. Rock Sleyster, Wauwatosa, Wisconsin, and Dr. Olin West, Chicago.

Gracious answers to letters addressed to the President and to Miss Josephine Roche, chairman of the Interdepartmental Committee to Coordinate Health and Welfare Activities, informing them of the appointment of the Committee, were received by the American Medical Association. The President expressed his gratification that the Association desires to be of service to the government "in connection with the development of sound plans for the betterment of public health and future expansion of medical service" and expressed the belief that progress in this work can be made by conference with the Association's Committee. He stated that he had referred the letter to the chairman of the Interdepartmental Committee with the suggestion that arrangements be made for a conference. Miss Roche also expressed a desire for a conference with this Committee and the October 31 date was selected.

#### LECTURES ON PEDIATRICS AND OBSTETRICS

Lectures to the laity on pediatrics and obstetrics being given under the auspices of the State Board of Health, the Committee on Maternal Welfare of the State Association and the Extension Service of the University of Missouri College of Agriculture are scheduled as follow for November and December:

PEDIATRICS		
Date	County	County Extension Agent
November		
14-15	Johnson	Virgil Burk, Warrensburg
16-17	Lafayette	Roy I. Coplen, Higginsville
18	Medical Group	
21	Saline	H. W. Hamilton, Marshall
22	Pettis	J. U. Morris, Sedalia
23	Medical Group	
28-29	Cooper	Paul N. Doll, Boonville
30	Howard	Dan E. Miller, Fayette
December		
1	Howard	Dan E. Miller, Fayette

Date	County	County Extension Agent
2	Medical Group	
5-6	Boone	Wendell Holman, Columbia
7-8	Callaway	Harold Slusher, Fulton
9	Medical Group	
12	Audrain	Glen Mutti, Mexico
13	Pike	S. E. Hargadine, Bowling Green
14-15	Montgomery	R. R. Vadnais, Montgomery City
16	Medical Group	
19-20	Lincoln	R. W. Bushnell, Troy
21-22	St. Charles and Warren	R. A. Langenbacher St. Charles Dorris D. Brown, Warrenton
23	Medical Group	
27	St. Louis	Russell Lander, Clayton
28	Jefferson	Earl T. Steele, Hillsboro
29	Franklin	Floyd Ingersoll, Union
30	Medical Group	

#### OBSTETRICS

Date	County	County Extension Agent
November		
1-2	Osage	Don Spalding, Linn
3	Cole	R. W. Kallenbach, Jefferson City
4	Medical Group	
7	Miller	W. D. House, Tuscumbia
8	Moniteau	Fowler Young, California
9-10	Morgan	H. G. Crawford, Versailles
11	Medical Group	
14	Benton	O. V. Singleton, Warsaw
15	Hickory	Ray S. Graham, Hermitage
16	St. Clair	Virgil Sapp, Osceola
17	Henry	Lloyd Redd, Clinton
18	Medical Group	
21	St. Charles	R. A. Langenbacher, St. Charles
22	Lincoln	R. W. Bushnell, Troy
23	Medical Group	
28-29	Montgomery	R. R. Vadnais, Montgomery City
30	Pike	S. E. Hargadine, Bowling Green

Date	County	County Extension Agent
December 1	Audrain	Glenn Mutti, Mexico
2	Medical Group	
5-6	Callaway	Harold Slusher, Fulton
7-8	Boone	Wendell Holman, Columbia
9	Medical Group	
12-13	Howard	Dan E. Miller, Fayette
14-15	Cooper	Paul N. Doll, Boonville
16	Medical Group	
19-20	Saline	H. W. Hamilton, Marshall
21-22	Pettis	J. U. Morris, Sedalia
23	Medical Group	
27-28	Ralls	Wm. A. Rhea, Jr., New London
29	Marion	F. R. Cammack, Palmyra
30	Medical Group	

Secretaries of these counties are urged to contact the Extension Agent in his county and make arrangements for these lectures.

#### RESOLUTION ON ANTENUPTIAL EXAMINATION LAWS FOR THE CONTROL OF VENEREAL DISEASE IN MARRIAGE

The following resolution on antenuptial examination laws for the control of venereal disease in marriage was adopted by the Council at its meeting in Jefferson City, August 31, providing the principles are subsequently approved by the committees on Syphilis, Mental Health and Maternal Welfare.

WHEREAS, There have come to the attention of the Missouri State Medical Association for approval or for constructive criticism two proposed antenuptial examination bills for the control of venereal disease in marriage; and

WHEREAS, The possibility of any sort of physical examination to determine the presence or absence of venereal infection is of extreme importance before marriage because of its many ramifications having profound effects in educational, emotional and moral spheres of the public mind, and such proposed legislation should be practical in operation if enacted as law; and

WHEREAS, Medical science has progressed to the extent that certain blood tests may be made to determine the presence or absence of syphilis with a satisfactory degree of accuracy for the purposes of an antenuptial examination law; and

WHEREAS, There is no test of the blood or microscopical smear test (and bacteriological culture is at present impractical for routine use of this sort) which can be relied upon, even in the hands of expert clinicians, for the diagnosis of all cases of gonorrhea by a routine single examination, and the nature of such examinations make them objectionable to the public if repetitious; and

WHEREAS, Chancroid, granuloma inguinale and lymphopathia venereum are usually so obvious to the sufferer, and their occurrence so relatively uncommon, they hardly present a public health problem for antenuptial discovery; and

WHEREAS, A profound study of fifteen recently enacted antenuptial examination laws, and thirteen which failed to become laws in various states, and their public effects, teaches us that vagueness of purpose, impracticable broadness of construction or too exacting idealism have served only to frustrate their beneficial intent either for passage in legislative assemblies or in public enforcement; therefore, be it

*Resolved*, That the Council of the Missouri State Medical Association is impelled to subscribe to the principles subjoined, and believes them to be of paramount importance in the practical operation of an antenuptial examination law for the control of venereal disease in marriage, suitable for reasonable acceptance by the present conscience and understanding of the public mind of Missouri:

1. The administration of the antenuptial examination law should be under the authority of the State Department of Health. Records should be safeguarded and the public records of individuals found to be suffering with venereal disease by the operation of this law must remain confidential except as provided by law.

2. Antenuptial examinations should be made by licensed physicians, and examinations of biological specimens should be carried out only by persons or laboratories having the approval of the State Department of Health.

3. The antenuptial examination law should provide for a legal certification by the applicant for license to marry that he or she believes his or her own body is free from all venereal disease.

4. The recorder of deeds should be allowed the discretion to issue licenses to marry solely on his own initiative only to those applicants who may present and file a blood test report from an acceptable source which certifies that no evidence was found to indicate the presence of syphilis.

5. In such cases in which the applicant for license to marry does not certify to his or her belief of his or her freedom from venereal disease, or the blood test is doubtful or positive about the presence of syphilis, the recorder of deeds should not be permitted to issue a license to marry to any such applicant, except by

(a) Certification of a qualified examining physician that the applicant has been thoroughly examined and that the applicant has no communicable venereal disease;

(b) By order of a probate court for the purpose of making births legitimate, or in such cases in which in the interest of public welfare an infected person may marry without exposing spouse or offspring to infection, and proper medical treatment has been arranged for by the court, and

(c) Certification by at least two legally qualified medical practitioners that one of the applicants to a proposed marriage is on his or her deathbed and unlikely to consummate the marriage.

6. The antenuptial examination law should contain a penalty clause for the punishment of any person who violates or causes a violation of any provision of the act.

7. It should be the duty of the recorder of deeds to participate in the education of the public on the subject of venereal disease in marriage to the extent of supplying all applicants, and other interested persons, with copies of the Antenuptial Examination Law for the Control of Venereal Disease in Marriage.



## COMMITTEE ON CONSERVATION OF EYESIGHT

### "The Eyes of Your Child"

As a part of the work of the Committee on Conservation of Eyesight of the Missouri State Medical Association I wish to talk on the subject "The Eyes of Your Child."

Eyesight is next to life itself and good eyesight is available to most everybody who will cooperate with his eye physician. Eyesight should be conserved in every possible way so that your welfare and the welfare of your children is kept at the highest possible level. Good eyesight helps raise your economic and intellectual level while poor eyesight handicaps you or your children so that you live at a lower economic and intellectual level.

Poor eyesight, partial blindness or blindness can be prevented in many cases if the proper thought and care is used from childhood throughout adult life. Parents do not show as much concern about the eyesight of their children, especially those of preschool age as they should. This is a great mistake and may result in nervous, poorly educated and heavily handicapped young men and women in later years.

Babies' eyes grow and develop day by day just the same as the other parts of their bodies and minds. Help your child to develop his eyesight as well as his body so that he will develop mentally.

You as a parent take every care and precaution of your baby's eyes during the first year and if they look all right to you, you neglect them during the next four or five years until the child goes to school. Obtain an eye examination every year or two during this age so that you will know and not guess. Ask your family doctor to recommend an eye physician for these periodic examinations. Do not wait until the child is 5 or 6 years old and goes to school and is given a hurried inadequate test. Eye strain or eye defects may be quite advanced by this time. This inadequate examination may overlook many beginning conditions because it had to be made hurriedly. An eye defect or strain developing during these years may change the child's outlook on life, his character and personality so that he will be handicapped during life. Eye tests at school may show that your child reads all the test letters, but he can still be far sighted so that close reading is fatiguing. He will then lose interest and avoid his books and compensate by intensive interest in play and sports. He becomes a good athlete but is a poor student. Again he may be near-sighted. Near-sightedness is a disease and progresses and becomes worse each year if not treated and glasses used. The sooner treatment and glasses are obtained from an eye physician, the less likely is the child to neglect physical development and live unto himself in his books and studies. Untreated, he becomes a good student but is usually weak, sickly and underdeveloped physically.

The child may have astigmatism which makes him nervous, cross and irritable with a strained or anxious facial expression or a continual frown. The proper correction of all these eye conditions has often transformed poor scholars into alert, responsive students.

Just a word about cross eyes. Take your child, no matter how young, to an eye physician the first time you notice any slight crossing or squinting. Do not delay. They do not grow out of it. Glasses on a child are not near as bad as poor vision throughout life.

Many parents think that weak eyes are inherited and as they have weak eyes their children must have weak eyes. This is far from the truth and nearly every child can be given normal vision, except in certain inflamma-

tions and diseases of the eye, if taken to your eye physician early in life.

The Committee on Conservation of Eyesight of the Missouri State Medical Association, representing the physicians of the State of Missouri, desires that the services of all its eye physician members shall be available to parents and children throughout the entire state. To this end, the Committee has made arrangements whereby parents or their children who have defects of vision may obtain examinations and glasses, if needed, on a basis adjusted to their particular ability to pay. This information may be had from your county medical society or the Committee on Conservation of Eyesight of the Missouri State Medical Association.

## THE STATE BOARD OF HEALTH

### DISTRICT HEALTH UNIT PROGRAM

That the health status of the nation had radically changed was brought to light during the early days of the World War. The average large city was no longer the graveyard of humanity but instead its inhabitants in general were so well safeguarded that in many instances it was safer to live there than in the country. It was then realized that people in rural communities were in need of health protection. After several years of trial it was found that the local county health unit was the most efficient and economical public health agency for such areas, and many southern states made rapid advances in the formation of such units. Missouri showed promise, and at one time had fourteen full time county health units participating in the state program.

That these units are practical is demonstrated in their survival through the depression years in each large county of the state where they had been established. The establishment of county units did not progress in this state due to several factors, first of them being that few counties could afford them under our present tax laws and, second, that in a large group of counties there was not sufficient population to warrant such developments and, third, the political nature and insecurity of office precluded recruiting trained personnel to man them.

In the spring of 1937 the floods in Southeast Missouri offered an opportunity to try out another plan to give the rural health services. Several counties were grouped into districts and trained personnel consisting of a medical officer, public health engineer and two or more nurses were placed in charge of each district representing the State Health Department. No local health agency was decreased or abolished, instead the new organization was to supplement any health services then available. These district units were so satisfactory that it was decided to make the plan state wide so that every rural dweller would be given a minimum of health protection by the state.

In developing such a state wide plan the first consideration was one of finances. Dividing available funds by the cost of one unit determined the possible number of districts as ten. The problem then arose as to how to divide the state. A survey of mortality statistics solved the problem partly and the inability on the part of local communities to provide something for themselves answered the question. Districts 2 to 11 were formed consisting of a variable number of counties. (See map.) A headquarters for the organization was selected as near the center of the district as possible and in a town or county where the local community would supply the offices and clerical assistance.

The personnel necessary to staff such organization had to be obtained and trained at the expense of the state

Material furnished by the State Board of Health.

in one of the recognized schools offering such postgraduate training. The absence of such trained people within the state and the necessity of training those present naturally slowed up the progress. One full year was required before all the units could be staffed and put into operation.

The personnel, as in the original units, consists of only a skeleton of the staff necessary to give detailed health services and consists of a medical health officer, public health engineer and two or at most three nurses, regardless of the size of the district. This staff was paid by the state through the aid of Social Security allotments made by the United States Public Health Service and United States Children's Bureau. In addition, subsidies toward individual county nursing services have been granted to counties wishing more service than the district could give them. These nurses become an integral part of the district unit and are supervised by the district health officer but confine their work entirely to one county. The State Department of Health realizes fully that a much larger personnel than the district provides is essential to a good, constructive, well rounded health promotion and disease prevention service and anticipates supplying financial aid to any county wishing to develop its own county unit in order to further safeguard its citizens. A list of the districts with their staff is given at the end of this article.

The question naturally arises as to what the districts are to do and how they are going to do it. In the first place whatever is done must be in harmony and in cooperation with the physician. Second, each district has entirely different health problems so that the programs will naturally vary from district to district.

The health officer and his staff have endeavored to contact every physician within his jurisdiction. He wished to be invited and to attend the medical society meeting in each county to learn the needs and to ascertain to what extent his organization can assist the profession, and then to work out with them a suitable public health program covering the following fields.

1. In acute communicable disease control the health office will attempt to aid by consultation services with the family physician, public health nursing on physicians' order, advice as to isolation of patient and prevention of spread within the family, epidemiological investigation of sources of the disease and spread of contacts.

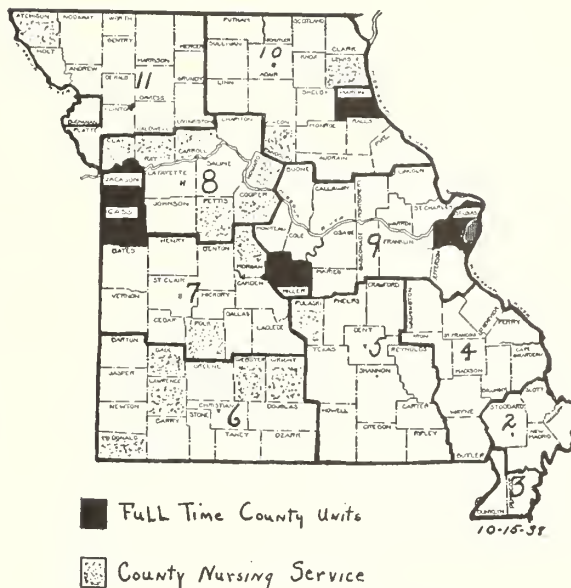
2. Immunization against smallpox, diphtheria and typhoid fever should no longer be a source of any uncertainty. This work will be carried on in each district according to the medical society plan; i. e., done by the local physician, free or for pay with material furnished free for the indigent. After this work has been organized and publicized by the public health workers, only in areas inaccessible to physicians or where they do not want to conduct such clinics will the health officer carry on such a program.

3. Maternal and child hygiene is primarily the work of the nurse who finds cases, gets them to consult their physician and teaches these patients by interpreting for them the physician's instructions. Prenatal and postnatal literature is provided.

4. School health is carried on primarily by teaching and demonstration. The extremely small personnel precludes anything more than this type of work except where communicable disease control is necessary in the school system.

5. Syphilis control emphasizes treatment of the early case, case finding, case holding and examination of contacts. Treatment is anticipated only in patients referred by a physician to the health officer. Home visiting of delinquent cases and investigation of contacts will gladly be done by the nurses or health officer for the private physicians and such cases urged to return for further treatment or examination if the physician wishes to

## District and County Health Units



request such services. Medication will continue to be supplied by the physician for indigents he wishes to keep and treat as private patients.

6. Environmental sanitation in all its phases will be the duty of the public health engineer. This will mean a much closer supervision of public and semi-public water supplies and sewerage treatment, milk sanitation, school sanitation, advice and assistance to individual property owners in regard to sanitation, and to some extent industrial hygiene in the broad use of this term, as adult hygiene.

These six functions are the primary objectives of the district health unit. Medical relief is not a part of the program and at present is invested by statute solely in the various county courts. No medical service will be attempted.

The nursing service likewise is not a bedside, sick room or visiting nurses plan. Nurses may make one call upon a patient for demonstration or instruction but no return visits will be made except on orders of the attending physician to whom she must immediately report the results of such a visit. A list of standing orders for the nursing personnel will be taken up with the individual societies for their approval or disapproval.

The whole plan is intended to throw around the community such safeguards as modern scientific medicine has to offer and to bring about an earlier and more lasting patient-physician relationship by teaching the public the desirability of depending upon the physician not only for curative medical services but also for advice in prevention of illness. For the plan to succeed to the fullest degree requires complete cooperation between the physician and the field forces actually performing these services. Your district health officer and his staff desire to serve you and the public.

### Health Districts

District Number	Personnel	Headquarters
2	Dr. T. L. Waddle	Dexter
	Mr. T. J. Boomer	Dexter
	Miss Clara Drinkwater, R. N.	Dexter
	Miss Talitha Ritterbusch, R. N.	Dexter



District Number	Personnel	Headquarters
3	Dr. W. H. Aufranc Mr. W. K. Rodman Miss Louise Howerton, R. N. Mrs. Mea Bosworth, R. N.	Kennett Kennett Kennett Kennett
4	Dr. E. M. Bryan Mr. A. R. Baron Miss Louise Schott, R. N. Miss Lillian McDonald	Fredericktown Fredericktown Fredericktown Fredericktown
5	Dr. C. W. Meinershagen Mr. J. M. Dewey Miss Marcella Schumer, R. N. Miss Bessie Wilson Miss Dorothy Dene, R. N.	Salem Salem Salem Salem Richland
6	Dr. H. H. Asher Mr. W. E. Casey Miss Dorothy Vanneman, R. N. Miss Margaret Gerling, R. N. Miss Irene McQuiston, R. N. Miss Paula Cook, R. N. Miss Margaret Morris, R. N. Miss Hallie McIntosh, R. N. Miss Ida Gutschke, R. N.	Ozark Ozark Ozark Ozark Greenfield Pineville Mt. Vernon Marshfield Hartville
7	Dr. M. L. Gentry Mr. Glen Harwell Mrs. Bertha Stevens, R. N. Miss Corrine Faust, R. N. Mrs. Clara W. Dewhirst, R. N. Mrs. Lorena Lawrence	Osceola Osceola Osceola Osceola Bolivar Versailles
8	Dr. Asa Barnes Mr. G. J. Hopkins Miss Dorothy Nonnenkamp, R. N. Miss Helen J. Crowe, R. N. Miss Sue Wilson, R. N. Miss Lovisa Smart, R. N. Miss Ann Drain, R. N. Miss Bernadette Crahan, R. N. Miss Frances Schooling, R. N. Miss Elizabeth Guy, R. N.	Higginsville Higginsville Higginsville Higginsville Boonville Liberty Richmond Carrollton Fayette Sedalia
9	Dr. S. S. Barnes Mr. James Menefee Mrs. Beatrice Gruggs, R. N. Miss Renilda Hilkemeyer, R. N. Miss Pauline Bumgradner, R. N. Miss Hetty Joach, R. N.	Owensville Owensville Owensville Owensville Owensville Jefferson City
10	Dr. W. J. Sullivan Mr. A. H. Beard, Jr. Miss Frances Grimes, R. N. Miss Sybil Wilson, R. N. Miss Margaret Hamlin, R. N. Miss Ruth Peters Miss Margaret Ranck, R. N.	Kirkville Kirkville Kirkville Kirkville Kirkville Moberly Monticello
11	Dr. L. F. Weyerich Mr. N. J. Gilsdorf Miss Marie Meyer, R. N. Miss Daisy Stuart, R. N. Miss Pearl Nelson, R. N. Miss Minnie Strobel, R. N.	Cameron Cameron Cameron Cameron Cameron Rock Port

## OBITUARY

CLARENCE MARTIN, M.D.

It is with deep feeling that I am called upon to render a eulogy on Dr. Clarence Martin, St. Louis. We were boyhood friends and were almost constantly in touch with each other during our student and professional lives, consequently I knew the man

intimately. His life was a full one, he was an indefatigable worker in his specialty as a urologist, he was kindly in his manner and beloved by all his friends and patients. He was particularly skilled as a surgeon for after his graduation at the old Barnes Medical College in 1898 he was attached to the regular army with the rank of Captain and due to his keen sightedness and ability he was called upon to establish a hospital at Mindanao in the Philippines and was there for one year.

He distinguished himself as an army officer during the Boxer Rebellion in China; he spent several years in the Orient as a medical officer. Following his return to this country he was in the general practice of medicine and surgery for a short time and then went to Europe where he served a one year internship at St. Peter's Hospital in London, and later spent nearly two years in Berlin and Vienna.

Returning to this country he established himself as a urological surgeon, and due to his ability and personality was eminently successful. He served in France during the World War and returned with the rank of Lieutenant Colonel, when he again resumed practice and took up his former duties as editor of the *Urological and Cutaneous Review*. It does not come to all men to have led such a continuously useful life. Dr. Martin was an active member of the St. Louis Medical Society and gave much of his time to promoting its welfare. He was a St. Louisian by birth. He passed away December 7, 1937, at the age of 60. He leaves his widow, sisters and brother and other members of his family to whom he was loyal and devoted at all times, and his passing has saddened the hearts of many others.—O. A. A. in the *Weekly Bulletin* of the St. Louis Medical Society.

GEORGE S. DRAKE, M.D.

Dr. George S. Drake, St. Louis, was born in St. Louis, June 5, 1875, and died on October 27, 1937, at 9 a. m. in the Peter Brent Brigham Hospital, Boston, at the age of 62 years. Dr. Drake had been ill for the last two years and had been confined in the hospital for four months preceding his death.

He graduated from St. Paul School at Concord in 1893, after which he entered Yale University and was graduated in 1897. Dr. Drake attended the Johns Hopkins University School of Medicine. After his graduation, he remained four years in Baltimore as resident surgeon of the Union Protestant Infirmary. During this time he was an associate of Dr. John F. Finney, a noted surgeon under whose tutelage, Dr. Drake continued his studies. He returned to St. Louis in 1905, associating himself on the staffs of the Barnard Free Skin and Cancer Hospital and the St. Louis Children's Hospital. Dr. Drake served as Captain in the United States Army during the World War. He retired from active practice ten years ago.

He is survived by his widow, Mrs. Myrtle Clark Drake, and a sister, Mrs. C. Scott.

May his soul rest in peace.—F. W. V. in the *Weekly Bulletin* of the St. Louis Medical Society.

JAMES EVERETT PIERPOINT, M.D.

Dr. J. E. Pierpoint, Skidmore, a graduate of Ensworth Medical College, 1899, died at his home of coronary occlusion, July 14, aged 69 years.

Dr. Pierpoint was born at Sistersville, West Virginia, and moved with his parents to Missouri when he was quite young. He attended the public schools and the Standberry Normal before studying medicine. He began his practice in Skidmore upon the completion of his medical studies and remained in active practice until five years ago when he retired because of ill health.

He served as captain in the medical corps during the World War. He was a member of the Masonic, I. O. O. F., Modern Woodmen and Elks lodges.

He was an honor member of the Nodaway County Medical Society.

He is survived by his widow, one son, one stepson, one brother and two sisters.

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JOSEPH C. R. DOGGETT, M.D.

Dr. J. C. R. Doggett, Crane, a graduate of Barnes Medical College, 1905, died at a Springfield hospital, March 29, of cardiovascular-renal disease, aged 56 years.

Dr. Doggett was born in Virginia and moved to Kansas City, Missouri, while very young and to Marionville while still a child.

After finishing his medical studies he began his practice at Crane where he remained in active practice. He was an active and popular practitioner of medicine. He owned and operated the Doggett Drug Store in Crane for many years.

Dr. Doggett's hobby was Polled Hereford cattle of which he had a fine herd. His efforts at breeding this strain of pure bred cattle has had a wonderful influence on the beef cattle industry in Missouri and adjoining states.

He is survived by his widow, Mrs. Ethel Doggett, a son and two daughters.

He counted among his intimate friends almost every physician in southwest Missouri.

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JOHN GUSTIN LOVE, M.D.

Dr. J. G. Love, Sedalia, a graduate of Beaumont Medical College and Marion-Sims College of Medicine, 1901, died at his home May 25, aged 62 years.

Dr. Love was born in Hanover, Illinois, and moved to Missouri in 1901. On completing his medical studies he went to Sedalia as an intern and remained in practice there. He spent a year studying in Chicago. In 1907 he was appointed to the staff of the state hospital at Nevada and remained there until 1913 when he returned to Sedalia. He did much work with the Missouri Commission for the Blind.

He was active in church and Masonic work.

He had served the Pettis County Medical Society as president, vice president, censor and alternate delegate. The Society adopted the following resolution upon his death:

WHEREAS, God in his great wisdom has seen fit to call Dr. J. G. Love from our midst, from labor to refreshment and rest, be it

*Resolved*, That the Pettis County Medical Society has lost a valuable member, that the members of the Society have each lost a true and worthy friend, and that our community has lost a true Christian gentleman and a capable and conscientious physician. Be it further

*Resolved*, That a copy of these resolutions be sent to Mrs. and Miss Love, a copy to the local press, a copy to the Missouri State Medical Association and a copy spread on these minutes.

Dr. Love is survived by his widow, Mrs. Margaret Webster Love, a daughter and a brother.

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GEORGE W. TONEY, M.D.

Dr. G. W. Toney, Piedmont, a graduate of the St. Louis Medical College, 1880, died May 15, aged 83 years. Death was due to heart failure and Dr. Toney was ill only a short time. While he had not been in robust health for some time, he remained actively engaged in practice and was at his office the day previous to his death.

Dr. Toney was born in New Madrid County. The family moved to Wayne County during the Civil War

and resided on a farm a mile north of the limits of Piedmont which was not then in existence. Dr. Toney grew to manhood there and attended the local schools before studying medicine. He immediately began practice in Piedmont and remained in practice there except for a short time when he practiced in Fulton.

Dr. Toney united with the Christian Church in Piedmont shortly after its organization and was active in its interests.

He is survived by his widow, Mrs. Leslie Barnett Toney, a son and a daughter and many friends.

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BOOKS FOR LEISURE MOMENTS

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COSMIC ENTELECHY

The Terry Foundation of Yale University provides for a series of lectures designed to interpret scientific advance in the light of religion and to assimilate future research into the religious structure. The fifteenth lecture in the series is by Carl Gustav Jung, Professor of Analytic psychology in Zurich. His special interest in this lecture is to interpret religious symbolism as it is reflected in the mythology that preceded the setting up of formal religions and the dreams of his twentieth century patients.

Archetypes, mental preconditions characteristic of the cerebral function, recur in successive generations of human beings. They behave in the manner of inherited biological traits. Jung makes a careful analysis of certain symbols found in the writings of the early philosophers and theologians. He presents the case history of a patient whose dreams held a large religious context. He points out the recurring similarity in the symbolism of these dreams and the symbolism of medieval authors. From this base he reduces the existence of a feeling for religion in every human being.

However, this innate tendency toward religious expression has been oftentimes drowned in the showy formalism of religious ceremony. The manifest religious activities of the average person do not reflect his inner urge in this respect. The former arise from the trappings with which these feelings have been invested by those who assume the role of spiritual leaders. Whether man is the poorer for this does not enter into the discussion of Professor Jung. He confines himself entirely to the question posed by the title of his lecture, "Psychology and Religion" (Yale University Press, New Haven). He insists that without the historical perspective one cannot understand the existence of the religious emotion. The unconscious mind of man has worked along the same lines of thought as those followed by his unknown forebears of a thousand years ago.

This little book will not prove easy reading. But it does lead to the conclusion that there is a cosmic entelechy, a realization of form-giving cause in a more or less perfect actuality. Perhaps the actuality is the better because these traits are inherent to man, biologically transmitted the better to attune man to nature.

B. Y. G.

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YESTERDAY, TODAY, TOMORROW

Regardless of our personal feeling the last half decade has witnessed an increasing regimentation of men. The ruthless abuse of national storehouses coupled with an overexpansion of the population resulted in depletion of our natural resources. A top-heavy financial structure restricted the buying power of the mass of the people. Industrial stagnation followed. Factories had no funds to manufacture what the unemployed could



not buy. Increasingly larger groups of the population were, in consequence, unable to provide themselves with the necessities of life. Private charity was unable to cope with the ensuing problem of dire distress and suffering.

Using these consequences of the economic cycle as the basis of her story "We Too Are the People" (Little, Brown and Co., Boston), Mrs. Louise V. Armstrong pictures the heroic measures of the New Deal calculated to overcome the catastrophe inaugurated by the unthinking economic royalty of an earlier era. The depression sent her and her husband to a tiny backwoods sanctuary in Michigan where they owned a summer home. Their savings wiped out, good fortune led to her appointment as relief administrator in a county poverty stricken since the lumber barons cut out all the available timber.

For 474 pages Mrs. Armstrong weaves a breathless tale of the unceasing struggle to rehabilitate families already talking of open revolt. Through direct as well as work relief the inhabitants of the little backwoods community were provided with sustenance requisite to the maintenance of life and courage. In fourteen chapters Mrs. Armstrong depicts the varied phases of her own and her assistants' activities. The author is by no means a skillful writer. Nevertheless the warm humanism which actuated her infects the reader with a desire to go with her through the many trials of the period.

In general, the petty politicians of the community proved the greatest stumbling block to accomplishment. They were selfish seekers for their own aggrandizement. They sought every opportunity to block administration measures designed for the betterment of the community. In some instances it was only the threat of newspaper publicity that forced individual commissioners to agree to plans providing labor relief for hundreds of their fellow citizens. Mrs. Armstrong was the largest employer of labor in the county. Her good offices brought forth exceedingly desirable traits in citizens long thought worthless. She proves again that the opportunity of work rehabilitates many a man. On the whole she makes out a convincing case for the New Deal program. Underneath her optimism I gained the feeling that she was not entirely satisfied by the results. Much more might have been accomplished.

Physicians should be particularly interested in this volume. The very disinterestedness of this administrator provides an example of what the regimentation of physicians might do to the medical profession. Other administrators might be more anxious or more ambitious. Other administrators might be more easily swayed by the subtle exhortations of practical politicians. There is both a warning and a threat of what may come to the American medical profession. Recent activities in the national capital tend to a belief that the day for regimentation of the profession is nearer at hand than even the least optimistic would like to believe.

At the present time physicians are preparing to meet the imposition of arbitrary schemes of practice. To parry the probable injustices of such a system it might develop its own board of administrators, physicians chosen because of their personal integrity and their devotion to the idealism of the profession. Such a board might do more than any amount of argument to soften the blow of the threatened congressional action. Such a board might, through cooperation with the government, insure the autonomy of the medical profession.

In closing my review of this significant contribution to current thought I quote: "... No matter what political party rules ... real progress toward social justice cannot be achieved ... unless the people themselves ... rise above the selfishness, the pettiness and the indifference which have grown out of the greed of

many past decades of so-called progress. The government, even as administered by the most upright and high-minded leaders, cannot overcome the handicaps of a shallow-minded, unthinking citizenry, unwilling to look present facts in the face and to help shoulder the burden of working toward a more truly civilized future." I cannot help wondering if in this paragraph Mrs. Armstrong does not pose a question for the profession as well as for the whole country. B. Y. G.

#### MONUMENT TO COURAGE

On the next to last page of his autobiography Chevalier Jackson, endoral endoscopist, writes that if he has made any mistake in his life it is in having written "The Life of Chevalier Jackson" (Macmillan, New York). If he had not written this book he would have failed to give to the profession and to the world that portion of himself which is inevitably bound to be more enduring than even his monumental contribution of a whole new branch of medicine. For here is the picture of a man.

It is a platitude to say that genius is 1 per cent inspiration. In the case of Chevalier Jackson that fraction provided the courage to go on in the face of insurmountable difficulties. That fraction provided the spur to the ninety-nine parts of perspiration necessary to attain the designation, genius. Endowed with a frail physique, three times the victim of tuberculosis, possessed of a mind that cringed in the face of physical suffering, permeated by an idealism that placed self last, Chevalier Jackson's greatest pleasure came from the solution of the insoluble problem.

That he has meant much to children whose vital processes were impeded by a carelessly swallowed foreign body is well known to the world at large. That he has restored life where only the tiniest thread sustained the homeostatic mechanism is already sufficiently attested to. That he has spread the gospel of bronchoscopy is evidenced by the horde of physicians who have sought for his instruction.

Now he has painted better than ever before the portrait of a man that should prove enduring stimulus to future students of medicine. The latter may acquire that fortitude which enabled him to overcome the handicaps of a body and mind attuned not to the multitude but to the infinite; they may gain from this volume some measure of that courage to enable them to strive on in the race of medicine against disease. They may develop a share of that magnificent self-abnegation which spells accomplishment.

Here is a book that is unqualifiedly urged upon practitioners and students. It may likewise be urged upon the layman and the practical politician. Through it they may learn to understand the vagaries and the philosophy that make a career like Chevalier Jackson's a reality. Perhaps the politicians may then pause for thought before they ravish the structure that is American medicine. B. Y. G.

#### MISCELLANY

"Youth in the World of Today" is a forty page pamphlet published by the Public Affairs Committee. It is a graphic presentation of the problems facing modern youth. Not the least disquieting of these is that only two thirds of employable youths between the ages of 16 and 24 are at work. An unknown percentage of these are working only for experience. A fourth earn less than \$10 weekly and three fourths earn less than \$20 weekly. The healthiness of this group which constitutes one sixth of the population may be judged from the fact that one fifth of the applicants for enlistment in the army and navy are rejected because of physical weakness. B. Y. G.

## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.  
Perry County Medical Society, December 4, 1937.  
Ste. Genevieve County Medical Society, December 14, 1937.  
Camden County Medical Society, January 7, 1938.  
Webster County Medical Society, January 7, 1938.  
Montgomery County Medical Society, January 14, 1938.  
Dent County Medical Society, January 21, 1938.  
Miller County Medical Society, February 8, 1938.  
Moniteau County Medical Society, March 11, 1938.  
Morgan County Medical Society, May 7, 1938.  
Macon County Medical Society, July 30, 1938.  
Pulaski County Medical Society, August 3, 1938.  
Howard County Medical Society, August 5, 1938.

ASSOCIATE EDITORS: COUNCILORS OF THE  
TEN COUNCILOR DISTRICTS

#### FIRST COUNCILOR DISTRICT

A. S. BRISTOW, PRINCETON, COUNCILOR

##### Buchanan County Medical Society

The Buchanan County Medical Society met at the Missouri Methodist Hospital at 8 p. m. September 7. In the absence of the president and vice president, Dr. W. T. Elam was elected chairman pro tem.

Drs. Wilbur McDonald and William Redmond were unanimously elected to provisional membership.

Dr. Elam introduced Dr. E. F. Cook who in turn introduced the following candidates who are running for office this fall: Judge Ben F. Stanton, Gus Hillix and Mr. Smith, candidates for county judge; Maurice Hoffman, prosecuting attorney; Francis Smith, state senate. Dr. Cook made a few remarks in interest of his campaign for state representative. All candidates expressed their willingness to cooperate in furthering legitimate medical legislation.

Dr. Robert Bell, son of Dr. J. M. Bell, spoke briefly on the examination of persons accused of felony by psychologists in Massachusetts, the Briggs law.

Dr. E. E. Wadlow announced the fall clinic of the St. Joseph Clinical Society to be held at the St. Joseph State Hospital September 14.

O. EARL WHITSELL, M.D., Secretary.

#### SECOND COUNCILOR DISTRICT

H. B. GOODRICH, HANNIBAL, COUNCILOR

##### Randolph-Monroe County Medical Society

The Randolph-Monroe County Medical Society met June 14 in the Public Library Building, Moberly, at 8 p. m. The meeting was called to order by the secretary, Dr. M. E. Kaiser, Moberly.

Dr. W. R. Langston, Moberly, was unanimously elected to membership.

Dr. P. V. Dreyer, Huntsville, spoke on "Missouri State Hospitals." A general discussion followed.

The following guests and members were present: Drs. William Fleming, Chicago; G. W. Hawkins and F. L. Harms, Salisbury; P. V. Dreyer, Huntsville; M. P. Hunter, C. C. Smith, R. D. Streeter, T. S. Fleming, L. O. Nickell, C. K. Dutton, L. L. Grzesk and M. E. Kaiser, Moberly.

Following the meeting a lunch was enjoyed at Milners' Cafe.

##### Meeting of September 9

Dr. O. F. Bradford, Columbia, addressed the Society on September 9. This talk was under the auspices of the Division of Child Hygiene, State Board of Health, and was part of an extension program.

The following members were present: Drs. R. A. Woods, Clark; C. C. Smith, L. O. Nickell, F. L. McCormick, R. D. Streeter, L. L. Grzesk, M. P. Hunter, W. R. Langston and M. E. Kaiser, Moberly.

##### Meeting of September 13

The Society met at the Public Library, Moberly, at 8 p. m. September 13.

The immunization program for the public schools of the county was approved as proposed by the State Board of Health.

Dr. Karl Dietrich, Columbia, spoke on "The Relation of Urology to Obscure Abdominal Symptoms." He illustrated his talk with lantern slides.

Members and guests present were: Drs. Karl Dietrich, Columbia; G. W. Hawkins and F. L. Harms, Salisbury; J. P. Allen, Cairo; P. V. Dreyer, Huntsville; M. P. Hunter, L. L. Grzesk, R. D. Streeter, F. L. McCormick, T. S. Fleming, C. K. Dutton, L. O. Nickell, W. R. Langston, D. D. Smith, L. E. Huber and M. E. Kaiser, Moberly.

##### Meeting of October 14

The Society meet at the Public Library Building, Moberly, October 11 at 8:30 p. m.

Dr. William G. Sullivan, Kirksville, talked on "The Public Health Program of the State Board of Health." Dr. Sullivan is medical officer in charge of District 10 of the State Board of Health.

Dr. H. B. Goodrich, Hannibal, Councilor, spoke on "The Program of the Missouri State Medical Association."

Members and guests present were Drs. G. W. Hawkins and F. L. Harms, Salisbury; M. C. McMurry and J. F. Flynt, Paris; H. B. Goodrich, Hannibal; William G. Sullivan, Kirksville; M. E. Leusley, T. S. Fleming, C. K. Dutton, M. P. Hunter, L. E. Huber, L. O. Nickell, W. R. Langston, L. L. Grzesk, C. C. Smith, M. E. Kaiser, Moberly, and W. M. Ketcham, Kansas City.

M. E. KAISER, M.D., Secretary.



**FIFTH COUNCILOR DISTRICT**

W. A. BLOOM, FAYETTE, COUNCILOR

**Boone County Medical Society**

The Boone County Medical Society met at the Harris Cafe, Columbia, at 6 p. m., September 6. The meeting was called to order by the president, Dr. Dan G. Stine.

The secretary read a letter to Dr. D. A. Robnett from Amy Kelly, State Home Demonstration Agent, requesting a statement concerning the Society's attitude toward a hospitalization plan which she and several others were interested in starting on the University campus. Dr. M. Pinson Neal moved that the letter be acknowledged and that Miss Kelly be informed that the State Association is now carrying on investigation relative to the problem of group hospitalization and will report soon, at which time more information will be available. The motion was seconded by Dr. D. V. LeMone. Group hospitalization was discussed by Drs. H. M. Young, D. A. Robnett and C. M. Sneed.

The secretary read a report of the Woman's Auxiliary to the Society by the president, Mrs. Robert H. Simpson, in which she outlined the accomplishments of the Society throughout the year. The secretary called attention to the unusual nature of such a report as no written report from the Woman's Auxiliary had before been presented to the Society.

There being no further business the meeting adjourned for supper.

Dr. James M. Baker, Columbia, spoke on "The Modern Treatment of Burns, With Case Studies." He gave an excellent summary of the treatment of burns with tannic acid, from the time of its discovery to the present, calling attention to the mechanism of the production of shock in burns and its relationship to shock resulting from any type of trauma. He gave a more recent modification of this type of treatment, using 5 per cent tannic acid plus 10 per cent silver nitrate immediately thereafter. He called attention to the rapidity of the crust formation, the flexibility of this crust and presented a case of severe burn in which treatment of this kind had been used.

**Meeting of October 4**

The Society met in the lobby of the Student Health Center of the University at 6 p. m., as guests of the staff of the University Hospitals.

Dr. C. M. Sneed reported that the committee on medical economics was about ready to undertake the survey suggested by the American Medical Association on the needs and supply of medical care.

The application of Dr. Alvin C. Schopp, resident surgeon in orthopedics at the University, was referred to the board of censors.

The Society approved the application of the Missouri State Farm Bureau and other organizations approved by the Missouri State Medical Association for group hospitalization of its members.

Announcement was made by Dr. M. P. Moon of the meeting of the United States Public Health Association to be held in Kansas City.

There being no further business the meeting adjourned for supper.

Dr. William J. Stewart, Columbia, spoke on "The Smith-Petersen Nail in Treatment of Fractures of the Femur." He outlined briefly the importance of a maintenance of blood supply to the proximal fragment in fractures of the surgical neck, particularly those in which damage to the capsule of the joint occurs, and showed how secure impaction resulted in the accomplishment of this purpose. He presented roentgenograms and moving pictures to illustrate case studies in which this technic had been used.

M. E. COOPER, M.D., Secretary.

**SIXTH COUNCILOR DISTRICT**

A. J. CAMPBELL, SEDALIA, COUNCILOR

**Lafayette County Medical Society**

The Lafayette County Medical Society met in Lexington in the library building on September 27 at 8 p. m. Regular matters of business were disposed of.

An abstract of a so-called mystery case was presented and an opportunity was afforded all who so desired to discuss the case and give a diagnosis. After a variety of diagnoses were made, including the approved solution, Dr. G. W. Fredendall, Lexington, discussed the pathological report on the case and coordinated the facts given in the abstract with the final diagnosis.

Several case histories were presented and discussed. Refreshments were served at a local restaurant after the meeting.

E. S. WALLACE, M.D., Secretary.

**NINTH COUNCILOR DISTRICT**

E. C. BOHRER, WEST PLAINS, COUNCILOR

**South Central Counties Medical Society**

The South Central Counties Medical Society met at the Elliott Hotel, Mountain Grove, at noon on September 29, with the following members and visitors present: Mr. E. H. Bartelsmeyer, St. Louis, Assistant Secretary, Missouri State Medical Association; Drs. R. A. Ryan, R. W. Denny, H. G. Frame and A. C. Ames, Mountain Grove; R. M. Norman, Ava; C. F. Callihan, Willow Springs; E. C. Bohrer and A. H. Thornburgh, West Plains; H. L. Reed, Licking; E. G. Beers, Seymour; L. T. Van Noy, Norwood; J. R. Mott, Hartville; R. I. Davis, Birch Tree; G. B. Forest, Alton; C. W. Meinershagan, Salem, and R. B. Tilley, Plato.

Mr. Bartelsmeyer spoke on "The Attitude of the Medical Profession Toward the National Health Program" and told of actions taken at the recent special meeting of the House of Delegates of the American Medical Association. He discussed some of the workings of state medicine in European countries to be avoided in this country if possible.

Dr. Meinershagan discussed his work as district health officer under the State Board of Health and explained that it was not the intention of him or his nurses to interfere in any way with the local physicians in their practice or to dictate to them, but to help them.

A round table discussion on state medicine followed.

The meeting adjourned in the late afternoon leaving the time, place and subject for discussion and speakers for the next meeting to be arranged by the president and secretary.

A. C. AMES, M.D., Secretary.

**TENTH COUNCILOR DISTRICT**

E. J. NIENSTEDT, SIKESTON, COUNCILOR

**Cape Girardeau County Medical Society**

The Cape Girardeau County Medical Society met at the Colonial Tavern, Cape Girardeau, October 10. Members were glad to see Dr. D. H. Hope, Cape Girardeau, resume the chair upon recovery from a serious illness.

Members present were Drs. G. J. Tygett, G. W. Walker, J. H. Cochran, A. L. Fuerth, C. T. Herbert, W. F. Oehler, H. V. Ashley, O. L. Seabaugh, C. A. W. Zimmermann and D. H. Hope, Cape Girardeau; D. I. L. Seabaugh, Jackson, and Edward Crites, Sedgewickville.

Dr. C. A. W. Zimmermann, Cape Girardeau, reported a case of chronic idiopathic colitis.

The Society adjourned to lunch tables.

C. A. W. ZIMMERMANN, M.D., Secretary.

## WOMAN'S AUXILIARY

### WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION

17th Annual Meeting, St. Louis

President, Mrs. C. C. Tomlinson, Omaha, Nebraska.

President-Elect, Mrs. Rolla K. Packard, Chicago.

### WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION

15th Annual Meeting, Excelsior Springs

President, Mrs. Herbert L. Mantz, Kansas City.

President-Elect, Mrs. Paul F. Cole, Springfield.

Dr. Herbert L. Mantz, Kansas City, has been appointed adviser to the Woman's Auxiliary.

At the meeting of the board held in Columbia in September, it was voted to try a new plan for the essay contest. Following the Iowa plan the contest will be open to all pupils in the high schools of the state and state prizes of \$25 and \$15 will be given to the winners of the first and second prizes and ten \$1 will be given to the essayists ranking next. This is expected to increase the interest in the contest. The subject "Highway Hazards" is most timely and will appeal to the children. A copy of the rules and source material has been mailed to the superintendents of high schools in the state. For further information address Mrs. Paul F. Cole, 1033 South Weller Street, Springfield.

Dr. Robert E. Schlueter, St. Louis, was the speaker at the meeting of the St. Louis Auxiliary on October 11, and talked on "Recent Developments in Medical Science." The club presidents of the city were invited as guests. Miss Virginia Kelly presented a group of songs. A speaker from the Health Division gave a short talk on "Diphtheria." Mrs. E. Horace Johnson presided and Mrs. J. G. Calhoun was chairman of the day. A luncheon was served.

The Clay County Auxiliary had Mrs. Herbert L. Mantz, Kansas City, president, as the speaker at the October meeting held in Excelsior Springs. The Clay County Auxiliary has suffered the loss of Mrs. E. C. Robichaux who died recently.

The Buchanan County Auxiliary held its first meeting of the fall at the home of the president, Mrs. Charles Greenberg. The varied program included a skit "Saying It With Flowers" by Mrs. L. M. O'Meara, a book review "My Son, My Son" and three songs by Mrs. Roger Moore. The program was followed by tea. During the business session preceding the program the Buchanan County Auxiliary voted to send \$15 to the state essay fund; to collect a 10 cent per capita assessment for the emergency fund, and to carry on the study program as suggested by the state. One hundred four subscriptions to *Hygeia* (103 of them to schools) were reported.

## BOOK REVIEWS

**MATERNAL CARE COMPLICATIONS.** The Principles of Management of Some Serious Complications Arising During the Antepartum Intrapartum, and Postpartum Periods. Approved by the American Committee on Maternal Welfare, Inc. Prepared by R. D. Mussey, M.D., P. F. Williams, M.D., F. H. Falls, M.D., F. L. Adiar, M.D., Editor. Chicago: The University of Chicago Press. 1938. Price \$1.00.

This is a supplementary volume to "Maternal Care" which met an encouraging welcome. The ten directors of the Committee have obviously not allowed the weight of their names to carry the booklet, however they have thoughtfully offered a self-sustaining collection of three essays in convenient pocket size, neat format, contents precise and text minutely edited and revised by the directors after submission of the original drafts.

Dr. R. D. Mussey's chapter on toxemias of pregnancy is specific and alert, particularly readable and offers rational therapeutic defense parallel with developing symptoms and findings.

Dr. P. F. Williams' discussion of obstetrical hemorrhages is comprehensive, with sound advice and pointedly emphasized with acceptable thought provoking items of percentages.

Dr. F. H. Fall's chapter on puerperal infection stresses succinctly adequate prophylaxis over correct combat of infection.

The booklet is packed line for line with good, clear-cut obstetrical therapy, brief and friendly but not fragmentary.

A. B. S.

**HERNIA.** Anatomy, Etiology, Symptoms, Diagnosis, Differential Diagnosis, Prognosis, and the Operative and Injection Treatment. By Leigh F. Watson, M.D., Member of Attending Staff of California Lutheran Hospital and Methodist Hospital of Southern California, Los Angeles. Second edition. St. Louis: The C. V. Mosby Company. 1938. Price \$7.50.

This second edition, like the first, is a comprehensive treatise on all varieties of hernia. The author has limited himself to a discussion of those methods of treatment which have proven successful.

A strikingly new feature is the detailed description of the injection method of treatment. The author believes that about 90 per cent of patients are suitable for either injection or operation, and "all things being equal, the choice of methods is optional with them." Figures are cited showing a high percentage of cure by the injection method.

The final chapter on the medico-legal aspects of hernia has been rewritten to include the latest opinions.

R. B.

**PRACTICAL OTOLGY, RHINOLOGY AND LARYNGOLOGY.** By Adam Edward Schlanser, M.D., Colonel, Medical Corps, United States Army; Chief of the Eye, Ear, Nose and Throat Service, Letterman General Hospital, San Francisco, Calif., etc. Illustrated with eighty-one engravings. Philadelphia: Lea & Febiger. 1938. Price \$4.50.

This book of three hundred pages, excellently printed on paper which is mellow to the eye, proves delightfully easy to read. The author, an army officer, set out to write a book leaving out unessentials. He removed the chaff from the wheat in a manner that is indeed refreshing. Lacking no ingenuity he includes many of his "tricks" which are well worth the copying. The book covers the entire field of Oto-rhino-laryngology and includes plastic surgery, bronchoscopy and adds as good



measure a well written chapter on allergy. It is evident that his views are the result of a great deal of experience about which he writes in a way that bespeaks the ideal pedagogue. There is an absence of pedantic theory which will permit this book to be added to the already complete list of fine ear, nose and throat manuals, but to those of the profession who wish to read an earnest exposition of the subject with the "bark" taken off, this book does more than act as a library filler.

**THE NEW INTERNATIONAL CLINICS.** Original Contributions; Clinics; and Evaluated Reviews of Current Advances in the Medical Arts. Edited by George Morris Piersol, M.D., Professor of Medicine, Graduate School of Medicine, University of Pennsylvania, Philadelphia, Pa. Volume II. New Series one (old 48th). Philadelphia: J. B. Lippincott Company. 1938.

This volume of 294 pages consists of fifteen original contributions, six clinical reports and a rather complete review of terminal ileitis. The original contributions cover a wide field. They are with one or two exceptions brilliant examples of lucid brevity. They are more complete than would be expected and contain a large amount of information valuable to the general practitioner and specialist.

"Of making many books there is no end." However the collection of scattered information on an old subject or a new method of treatment renders a valuable service. The contributions on encephalitis, mandelic acid, dementia praecox and anthracotheapy will be of value to all who read them.

Unusual or not well established methods of treatment for rather well known and common diseases warrant discussion even at the expense of repetition. If a doctor contemplates surgery for the relief of hypertension he should read Dr. Karsner's contribution in this volume. If he comes under the definition of Sir Spencer Wells "A surgeon is a physician who operates," it will be useful although probably unnecessary for him to read it.

Karsner decides that essential hypertension is associated with definite renal changes and that renal hypertension and essential hypertension are the same. He goes into experimental hypertension rather completely omitting, however, Goldblatts experiment of occluding both arteries and veins of the kidneys. While he makes no mention of the work of Davis and Barker I conclude he is in agreement with their statement.

"Experimental hypertension produced by renal ischemia involves an effective substance produced in the kidney and most closely simulates clinical hypertension. It is not affected by any type of operation upon the sympathetic nervous system." The adrenal in hypertension is also fully discussed in a way that I believe should retard the efforts of those advocating adrenalectomy for hypertension.

The clinical data are well selected and must be read to be appreciated. For clinical reports they are rather complete.

The timely contribution on tumors of the adrenal cortex fails to mention the postoperative administration of cortical hormone. It is believed that hyperfunctioning tumors in the thyroid, pancreas, parathyroid and adrenals result in atrophy of the uninvolved part of the organ. In a case of left adrenal tumor the right adrenal is likely to be markedly atrophic consequent to the hyperfunctioning of the tumor.

Experimentally, Ingle and Kendall (*Science*, Sept., 1937) have produced atrophy of the adrenal cortex in rats by giving large amounts of the adrenal cortical hormone.

The information in this volume is so extensive and diversified that to obtain it elsewhere would require much study, and "much study is a weariness of the flesh."

J. G. S.

**MANUAL OF CLINICAL AND LABORATORY TECHNIC.** By Hiram B. Weiss, and Raphaël Issacs. Fifth edition. Philadelphia: W. B. Saunders Company. 1937.

This small booklet contains 128 pages of condensed reading matter, most of which is in outline form and provides ready reference to gross details of the most common laboratory tests and laboratory procedures that are in common use. A brief outline of history taking, a table of food values and methods of obtaining laboratory material add to the completeness of the book. Most of the laboratory tests are in outline form which is a great time saver to those interested in the gross description of a laboratory test. This book would be of greatest value to interns, general practitioners and laboratory technicians in finding an explanation for laboratory tests in condensed form.

V. B.

**MEDICAL STATE BOARD QUESTIONS AND ANSWERS.** By R. Max Goepf, M.D., Formerly Professor of Clinical Medicine University of Pennsylvania, etc. Seventh edition, revised. Philadelphia and London: W. B. Saunders Company. 1938. Price \$5.50.

The new edition of this standard text has been carefully gone over with the eradication of material which is out dated and the addition of newer developments, thus bringing the volume up to date.

Its chief usefulness is to offer the medical student or physician an easy method of reviewing his studies in preparation for state board examinations. It should not be considered a textbook for it does not contain more than cursory information about any subject indexed. To the properly trained medical student of today this book seems to the reviewer hardly necessary. To the physician who has been in practice and must take state board examinations it offers an easy method of review. The present edition is well conceived. The information, while brief, is accurate and the arrangement of the book is particularly commendable.

A. B. D.

**A TEXTBOOK OF GYNECOLOGY.** By Arthur Hale Curtis, M.D., Professor and Chairman of the Department of Obstetrics and Gynecology, Northwestern University Medical School; Chief of the Gynecological Service, Passavant Memorial Hospital, Chicago. Third edition, reset. With 318 illustrations chiefly by Tom Jones. Philadelphia and London: W. B. Saunders Company. 1938. Price \$7.00.

That a textbook has undergone three editions in eight years demonstrates the literary and scientific ability of its author and the technical advantages of its publisher.

The present work is a natural growth of a brochure "Gynecologic Diagnosis" which Dr. Curtis published for his students at Northwestern University.

The present volume contains a section devoted to pelvic anatomy which is clearly written and beautifully illustrated by Tom Jones, whose drawings were in many cases made from special dissections by Dr. Barry Anson.

A more detailed account of "The Endocrines" appears. The most salient points in diagnosis and treatment are recorded and, though brief, are sufficient since if necessary one may refer to more extensive works on the subject.

Of considerable interest is the chapter "Early Months of Pregnancy (Gynecological Aspect)" stressing the close association of obstetrical difficulties and the later appearance of gynecologic symptoms in the female.

The sections stressing the relation of the urinary and intestinal tract to gynecology are most informative and are worth a careful perusal.

On the whole this book is a welcome addition to any physician's library and particularly so to the obstetrician and gynecologist.

D. T. VD.

# THE JOURNAL

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## Missouri State Medical Association

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### PNEUMONIA

RECENT ADVANCES IN DIAGNOSIS, TREATMENT AND  
PUBLIC HEALTH CONTROL

H. I. SPECTOR, M.D.

ST. LOUIS

Pneumonia is a serious infectious disease of the lungs which may be caused by bacteria, filterable viruses or chemical and mechanical factors. I shall limit my discussion to a consideration of the bacterial pneumonias and to those types caused by the pneumococcus organisms since this particular group is responsible for over 80 per cent of pneumonia in adults and over 60 per cent of pneumonia in children.

I presume that most of you are familiar with the enormous annual contribution that pneumonia makes to the mortality statistics of any community. For instance, during the year 1936, in the United States 110,378 people died from all forms of pneumonia according to the Bureau of the Census.<sup>1</sup> During the same year pneumonia was outranked in number of deaths only by heart disease and cancer. In St. Louis during 1936, lobar pneumonia and bronchopneumonia combined occupied third place as a cause of death, killing 1245 people.

It is obvious from the figures cited that from the viewpoint of mortality pneumonia is a more serious disease than all other communicable diseases including tuberculosis.

In order to appreciate fully the significance of the advances that have been made in recent years in the diagnosis, treatment and public health control of pneumonia, it will be necessary to review briefly the gradual development of our knowledge regarding pneumonia. I shall consider the subject from four main aspects; namely, historical, bacteriological, serological and immunological, and public health.

*Historical Aspect.*—Although pneumonia was known to the ancients, it was not until the early nineteenth century that it was recognized as a distinct malady, and not until late in the same century

(1874) was the idea advanced that pneumonia was an infectious disease due to a specific cause. The beginning of actual scientific knowledge, however, dates back to the days of the discovery of the stethoscope in 1819 by Laennec whose masterly description of the physical signs and morbid anatomy of the pneumonic lung left little for subsequent observers to add or modify.

With the isolation of the pneumococcus germ by Frankel from the sputum of pneumonia patients and the subsequent isolation of the pneumococcus organism from the blood and organs of pneumonia patients by Weichselbaum in 1886, the causal relationship of the pneumococcus germ to lobar pneumonia was definitely established. This discovery was far reaching in its effect because it pointed the way for the future scientific attack on the pneumonia problem from the curative angle.

With further development of bacteriologic investigation came the knowledge that lobar pneumonia may occasionally result from infection by other organisms. It began to be realized that other organisms like the streptococcus, for instance, can produce the clinical, pathological and roentgen ray picture of pneumonia.

*Bacteriological Aspects.*—Not until the beginning of the twentieth century were actual refinements in diagnosis and treatment based on a study of the causative organisms introduced. For instance, in 1909 Neufeld<sup>2</sup> and Haendel of Germany first demonstrated the existence of different types of pneumococci. In this country, on the suggestion of Dr. Herman Biggs, the earliest work on the pneumococcus began under the auspices of the Medical Commission for the Investigation of Acute Respiratory Disease.

Further contributions to the study of pneumonia were made by Dochez, Gillespie and Avery in 1915. The studies of these investigators showed that there were at least three distinct and fixed types of pneumococci designated respectively as type I, type II and type III, which comprised about 80 per cent of all strains of the pneumococcal organisms encountered in patients with lobar pneumonia. An unrelated group of pneumococci was designated as group IV. Still further advancement in the classification

Read at the Annual Meeting of the Missouri State Public Health Association, Jefferson City, May 14, 1938.  
From the St. Louis Health Division.



of these organisms was made in 1926 when Georgia Cooper<sup>3</sup> and her coworkers began the publication of a series of studies on the different strains of pneumococci which previously had been classified as group IV and succeeded in resolving them into twenty-nine types. As a result of these studies the pneumococcus organisms are now divided into thirty-two types.

A recent practical diagnostic refinement was the development of the rapid method of pneumococcus type determination. The development of the technique of rapid type determination from the sputum by Neufeld is undoubtedly an important milestone in the evolution of diagnosis and the specific treatment of pneumonia. In 1931 Neufeld<sup>4</sup> together with his coworkers, Etinger and Tulczynska, introduced the specific capsule swelling reaction which occurs when the pneumococci are acted upon by the homologous immune serum. This method of rapid type determination was investigated in this country in 1932 by Goodner and was first described by Sabin<sup>5</sup> in 1933.

A year later at a meeting of the American Public Health Association, Cooper<sup>6</sup> and Walter reported on the reliability of the Neufeld reaction, and still later Bullowa established the accuracy of the Neufeld method by direct cultures from the lung and blood through the medium of lung puncture.

From the epidemiologic and clinical angle further progress was made when studies<sup>7</sup> on normal people, on family contacts and hospital attendants revealed that types I and II while rarely found in the upper respiratory tract of normal persons are, nevertheless, found in about 20 per cent of persons in intimate contact with pneumonia patients. This limited distribution of types I and II pneumonia and contacts suggests that the infection is spread by contact and that pneumonia due to these types may be definitely regarded as a communicable disease. Accumulated evidence suggests also the advisability of regarding types V, VII and VIII as of considerable importance in this respect. The remainder of the types up to and including type XIX are, according to some observers, as prevalent in the general population as in the pneumonia group. Lobar pneumonia due to the latter types, therefore, commonly arises in consequence of invasion of the lung by organisms normally inhabiting the mouth.

It will be seen from the foregoing that the study of pneumonia during the last quarter century was generally centered around the causative organisms, since it was realized that while the clinical course of pneumonia from the viewpoint of symptoms and roentgen ray may be the same, the causative organisms were not the same. The results of the study of the behavior of the pneumococcus organisms were, therefore, distinctly a contribution to methods in diagnosis and treatment of pneumonia. It is apparent from these studies that a diagnosis of pneumonia without identifying the causative organisms is meaningless and of no aid in treatment.

*Serological and Immunological Aspect.*—Parallel

with the unfolding story of the characteristics of the pneumococcus organisms was the attempt of investigators to utilize this knowledge in their experiments with specific pneumococcus serum in their effort to find a cure for pneumonia.

Recent advances in the treatment of pneumonia were consequently based on the recognition of the different types of pneumococci and their reaction to specific sera. The curative value of antiserum has been definitely established<sup>8,9</sup> for certain types of pneumococcus infection by comparing results of treating with serum with the results of not treating with serum.

The development of antipneumococcus serum is gradually revolutionizing the clinical treatment of pneumonia. This new weapon is now being used effectively by the United States Public Health Service in its nation wide attack on the disease under the leadership of Surgeon General Parran and some nonofficial agencies. The story of the advances made in the treatment of pneumonia by serum therapy in the last decade is dramatic and fascinating.

Research in serum therapy was stimulated by the known fact that the repeated inoculation of an animal with a specific organism will lead to the development of an immunity which is largely specific for that organism. The first report on the use of specific antipneumococci serum was made by Neufeld and Haendel of Germany in 1910. Its use in the United States was first reported by Cole and Dochez in 1913 and later by Avery, Chickering, Cole and Dochez in 1917.

In 1920 Cecil and Blake showed that monkeys inoculated with a fatal dose of pneumococcus type I could be protected with specific type I horse serum.

In 1924 an advance was made in the treatment with serum when Felton developed a concentrated antibody serum. Felton's concentrated horse serum permits the administration of fewer doses in smaller bulk and more effectively. It simplifies the procedure and reduces the incidence of primary reactions and of serum sickness. The value of Felton's solution was conclusively demonstrated at Bellevue Hospital by Cecil, Sutcliffe and Plummer and at Harlem Hospital by Bullowa and Rosenbluth. About this time with the aid of a grant from Mr. Lucius N. Littauer of New York further progress was made when the first effective antipneumococcus type II serum was produced and refined by Felton.

In 1929 reports of the value of concentrated serum for the newer types of pneumonia began to be published. The clinical evaluation of the newly segregated types V, VII and VIII was done largely by the Harlem Hospital workers and was subsequently confirmed by the Boston City Hospital group.

An advance in the treatment and public health control of pneumonia was made when the Commonwealth Fund provided a grant for the dual purpose of evaluating the effectiveness of pneumonia serum under the conditions of the general practice

of medicine and of planning distribution of this serum for the treatment of those patients who might reasonably be expected to benefit from its use. As a result of these experiments it is now recognized that the most effective use of serum depends on the administration of the required amount in the shortest possible time.

Experiments are now being conducted by Goodnar, Horsfall and McLead at the Rockefeller Institute with unconcentrated but processed rabbit serum and at Harlem Hospital under the direction of Bullova with concentrated rabbit serum. Their limited experience to date indicates that rabbit immune serums have, theoretically at least, definite biologic advantages over horse immune serum and for this reason may in the future prove to be a further advance in the treatment of pneumonia. The advantage of rabbit serum over horse serum lies in the fact that the size of the rabbit serum antibody molecule is in general appreciably smaller than that of horse serum and for this reason rabbit serum may provide more accessible antibody and permit more ready penetration into the inflammatory process of the lung. Another advantage is the possibility of producing antiserum in rabbits in a much shorter time and in much higher concentration than in horses.

The preliminary determination of sensitivity to serum, the refinements in the technic for the administration of the serum and the newer knowledge in regard to the treatment of serum reactions when they do occur, put the treatment of pneumonia with serum on safe grounds.

In the administration of serum four things must be remembered:

1. The earlier the serum is used in the disease the more effective will be the result.
2. Cases that are recognized late should be given serum but in larger doses.
3. The bacteriemic cases need larger doses of serum more frequently administered.
4. Preliminary testing for serum sensitiveness is extremely important since this testing may avoid fatalities.

In this connection it should be mentioned that serum therapy is of equal aid in bronchopneumonia since the causative organisms for which serum is available may be the same in bronchopneumonia as in lobar pneumonia.

Artificial pneumothorax, diathermy and intravenous glucose are at present in the experimental stage and there is little evidence of their effectiveness in the treatment of pneumonia in general.

A word should be said here about recent possible advancements in the treatment of the non-pneumococcal pneumonias. For instance, sulphanilamide and prontosil are now being used experimentally in the treatment of streptococcus pneumonia and in type III pneumococcus pneumonia for which no effective serum is at present available. Neosalvarsan in small doses has been used with a degree of success in fusospirochetal pneumonia by the writer.

*Public Health Aspect.*—You undoubtedly realize that I have until now dealt mainly with the advances made in the differentiation of the causative organisms of pneumonia and with the advances in serum treatment of pneumonia. This is because any consideration of the public health aspect of pneumonia must involve the pneumococcus organisms and their response to serum treatment. It is apparent that any control program must revolve around two major principles; first, the early recognition of the causative organism of the pneumonia and, second, the immediate treatment of the pneumonia patient with an adequate amount of serum if an effective serum is available. Early recognition of pneumonia requires that the patient call the physician early in the disease because, as pointed out previously, serum therapy is most effective when used early in the disease.

Early treatment also implies early typing of the sputum in order to administer the proper serum and for the purpose of determining the infectious nature of the pneumonia. Our present knowledge seems to indicate that at least types I and II pneumonias are infectious and communicable. Since evidence seems to be accumulating pointing to the infectious nature of pneumonia of types V, VII and VIII in addition to type I and II, and since all these types cause the majority of pneumonia would it not be an intelligent approach to regard all pneumonias as mildly infectious and communicable diseases and treat patients with these diseases like other mildly infectious and communicable diseases? Health departments have not had the full cooperation from physicians and hospitals in this direction. In the experience of every health officer there are more deaths annually from pneumonia than actual reported cases. For instance, in the City of St. Louis there were 748 deaths from this disease but only 576 reported cases. This discrepancy is in contrast to what usually happens in the other communicable diseases like measles, scarlet fever and tuberculosis. Perhaps the reason for this discrepancy in reporting by physicians is because the infectiousness of pneumonia has to date not been impressively demonstrated.

From the public health angle we must remember that at the present time it is not fully recognized nor realized that pneumonia can be a controllable disease; that certain types of pneumonia are curable with serum, provided early treatment is instituted, and that with the use of serum early in the disease the death rate from pneumonia can be reduced 50 per cent. Obviously pneumonia should be regarded as a medical emergency. Early typing of the sputum is necessary if proper treatment is to be instituted. Laboratories should examine the sputum immediately. Since proper treatment of certain types, and especially type I pneumonia, depends on serum therapy, serum must be made available to the rich and poor alike in order to safeguard life. A death from type I pneumonia today because of failure to administer serum is gross negligence



and the responsibility for this neglect may fall on the patient for not applying for treatment early, on the doctor for not recognizing the disease early or on the public health official for not providing both laboratory facilities for typing sputum and serum for administration to those unable to pay for the service. The importance of treating pneumonia with serum has been realized by many philanthropic leaders and agencies in the eastern section of this country. For the last few years the Commonwealth Fund, the Littauer Fund and the Rockefeller Institute have aided considerably, through grants, in developing this service to the community. At the present time, the City Health Department of New York and the state health departments of New York, Massachusetts and Michigan<sup>10</sup> are in the forefront of this battle against pneumonia; they have provided laboratories for typing sputum and established pneumonia control centers for the distribution of serum free of charge to those unable to pay for this service. Other states and cities are beginning to attack the problem seriously. The St. Louis Health Division is making a beginning by providing free laboratory service to physicians. We have no funds at present for free serum distribution.

It should be realized that serum therapy is quite expensive averaging approximately from \$35 to \$45 per 100,000 units. Since from 300,000 to 400,000 units are at times necessary to treat a case of pneumonia adequately, it is clear that serum treatment is costly and beyond the reach of many people.

In conclusion, I wish to state that the control of pneumonia is based on education. Education of the community to call the physician early in the disease, education of the physician in the early recognition of the disease, education of public officials in recognizing the need for providing laboratory service and serum therapy to indigent people suffering from pneumonia, are the master keys in the control of pneumonia.

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## PNEUMONIA

### CAUSES AND COMPLICATIONS

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Pneumonia, that disease which is commonly ushered in by a dramatic suddenness with chill, pain in the chest and a blood tinged expectoration, constitutes one of man's most serious diseases. It is found at all ages, in all walks of life, among all peoples, in all geographic locations and in all branches and specialties of medicine. It is the enemy, especially of children, the postoperative patient and the undernourished ill fed individual, but a friend of the aged. In the latter group it is common that those hopelessly ill with malignancies, diabetes or nephritis, develop pneumonia and peacefully slip into the great beyond without those months of suffering, wasting and exhaustion that would otherwise be theirs.

In many areas this disease is responsible for more deaths than all the other communicable diseases combined. Among the obituaries of physicians published in the *Journal of the American Medical Association* during 1937<sup>1</sup> the communicable disease group, including tuberculosis, was responsible for 560 deaths of which pneumonia accounted for 392, or 70 per cent. It ranks among the first three of all causes of death on the North American continent and second only to prematurity as the cause for infant mortality under 2 years of age. It is the cause of fatality in approximately 50 per cent of those who succumb from whooping cough and measles. In Pittsburgh during the year 1936 there were reported 2556 cases with 1164 deaths, or a mortality rate of 45.5 per cent.<sup>2</sup> For the last five years Pittsburgh has had for those who contract this disease a death rate of 42.3 per cent. This does not represent an unusual incidence or mortality but only a source for recent statistics.

The lung field is the most open and exposed of all parts of the body. This anatomic factor plays a dominant role in the inflammatory diseases of this structure. By the bronchial tree air, laden with potential irritant and damaging substances as dust particles, gases and bacteria, enters the lung through inhalation at least 25,000 times every 24 hours of one's life. Toxins and infections when present in the blood reach there with every contraction of the heart, or through more than 100,000 strokes of this pump each 24 hours. The richness of blood and lymph supply to this organ are unequaled elsewhere, there being two sources of blood and a double lymphatic drainage. The venous blood pumped through it from the right ventricle comes from every tissue and organ of the body and brings waste products and often infectious material, in-

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cluding that which originates in the right heart chambers or valves. The arterial blood coming through the bronchial arteries carries materials from vegetations, thrombi, etc., from the left side of the heart, the aortic and mitral valves. The lung is unusual in its dual lymphatic system, one draining from the alveolar spaces parallels the bronchial tree toward the lung surface to arborize beneath the pleura, then follows the interlobar pleural space to the lymph nodes at the hilus. The other system parallels the pulmonary vein and its branches to drain directly to the hilus nodes after passing through several small nodes placed at bifurcations of the blood vessels and bronchi.

The lungs are veritable spongelike filters placed around and at the terminations of the bronchi, the pulmonary and bronchial arteries, pulmonary veins and the pulmonary lymphatics. Recalling these several potential sources for irritant substances and infections, one realizes the lung is an organ whose local resistance of necessity must be high.

#### ETIOLOGY

1. *Predisposing Factors*.—(1) Acute exanthematous diseases, especially measles and scarlet fever. (2) Acute infectious diseases as diphtheria, influenza, typhoid fever and whooping cough. (3) It is much more common and more serious at the two extremes of life, in infancy and the aged. (4) Alcohol addicts also have a higher mortality rate in pneumonia than others of like age, sex and race. (5) Exposure to wet and cold. (6) Fatigue, mental or physical. (7) It is more frequent among those greatly exposed to the elements and where there are inhalations of irritants as silica, asbestos fibers or chemical fumes. (8) Operations under inhalation anesthesia, largely through a lowering of local resistance and from aspirated elements as mucous plugs. (9) Otitis media is a rather common forerunner of pneumonia. (10) In bedridden patients gravity or hypostasis is always an important factor. (11) A terminal illness or a chance infection in malignancies, diabetes, nephritis. (12) Traumatic injuries to the brain or thoracic cage, particularly the posterior surface of the latter. (13) Unconsciousness with the accidental aspirations incident thereto. (14) Undernourished, ill fed individuals who have lowered resistance in general to all infections. (15) Sinusitis with dropping of exudate into nasopharynx.

2. *Direct or Immediate Causes*.—(1) Bacteria as pneumococci, streptococci and the Bacillus of Friedlander. (2) The inhalation of chemicals, gases, steam, smoke. (3) Parasites, as *Ascaris lumbricoides*, *Trichocephalus*, *Strongyloides*, and *Uncinaria*. (4) Physical bodies as blood clots, drugs, food particles, mucous plugs or oils aspirated into the lung fields. (5) Viruses as in influenza.

*Methods of Infection*.—The methods whereby infectious agents reach the lung parenchyma are: (1) Direct as through traumatic injuries or exten-

sions from tissue continuities. (2) Bronchiogenic as inhalation of infectious or other agents through the respiratory tract. Often this represents an accidental introduction of oils or fluids through efforts at forced feeding or administration of drugs, even by catheter or tube. The primary lesion is in the wall of some portion of the bronchial tree, hence a bronchitis. (3) Hematogenic or blood born infections which may reach the lung through either the pulmonary or the bronchial artery. The primary lesion here is that of a blood vessel wall or an arteritis. (4) Lymphogenic or infections through one of the dual lymphatic systems. The infection is frequently carried from one area of lung to another through this drainage system that gives primary damage to the lymph vessel wall or a lymph node where the infection lodges and secondarily involves the lung alveoli around these, hence circumlymphatic inflammations. One of these routes is responsible for the most common associated lesion of pneumonia, i. e., pleuritis.

#### CLASSIFICATION

For a more comprehensive interpretation and association of etiology the following classification with its implications is of invaluable aid:

Table 1. *Pneumonia Classification*

I. Lobar, Fibrinous or Croupous	1. Catarrhal or Desquamative Bronchopneumonia
	2. Collapse
	3. Aspiration, Deglutition, Operative or Lipoid
II. Lobular: Circumbronchial	4. Hemorrhagic Bronchopneumonia
	5. Hypostatic, Postural or Gravity
	6. Influenzal
	7. Gangrenous, Vincent's or Foreign Body
	8. Verminous
III. Chemical	
IV. Post-Traumatic	
V. Embolic, Pyemic or Septic: Circumvascular	
VI. Interstitial or Fibrous	
VII. Tuberculous	
VIII. Syphilitic; Pneumonia Alba	

I. Lobar, croupous or fibrinous pneumonia characteristically is produced by pneumococcus infections with the involvement of one or more complete lobes and the lesion goes through the classical four stages and terminates usually by crisis.

II. Lobular, often termed bronchopneumonia, which we look upon and describe as circumbronchial because the lesion is primarily of the bronchial wall with the lung parenchyma being involved secondarily and essentially around such primary focus. The pneumococcus may be a causative factor, but other agents are more common as streptococci, staphylococci, colon bacilli, *Bacillus pyocyaneus*, tubercle bacilli, foreign bodies or viruses.

1. Catarrhal, or desquamative bronchopneumonia, a type most commonly seen as a complication of measles and scarlet fever. The exudate, largely desquamated epithelium, is often aspirated deeper into smaller branches of the bronchial tree and



causes obstruction. By this means arises atelectasis that may in turn through infection become a collapse pneumonia.

2. Aspiration, deglutition, or postoperative, and lipid or fat cell pneumonia. These are more often seen in children and semiconscious or unconscious individuals following inhalation anesthesia and efforts at forced feeding or forced oral administration of drugs. In the general type there is always involvement of the bronchial tree, often with destruction of the wall and extension to surrounding parenchyma giving rise to abscesses, cavities or even gangrene. The lipid or fat cell type results from milk, oils or emulsions gaining entrance to the bronchial tree through nose drops administered in excess and injudiciously, forced efforts at administering oils, emulsions or milk to a struggling child or to an unconscious individual of any age. The distinguishing feature of this type is the phagocytosis of the oil globules and droplets by reactive cells in the air vesicles and bronchi.

3. Collapse pneumonia. This peculiar lesion is the result of air supply being cut off from an area of lung tissue as by (a) impairment of normal respiratory movements; (b) accumulations of viscid, tenacious mucous secretions; (c) hemorrhage with formation of clots in the respiratory tract; (d) the intrabronchial aspiration of food, fluid or drugs; (e) catarrhal or desquamative bronchitis. There is practically always a plugged bronchus, the air in the area is absorbed and atelectasis results. Early there is seen grossly a depressed or collapsed area. Pathogenic bacteria being present or gaining entrance give rise to inflammation.

The catarrhal or desquamative cellular exudate, the abnormal substances that enter the bronchus through inhalation or deglutition, and the postoperative massive collapse may each directly cause atelectasis. Beyond this, development depends upon the duration of the obstruction, the virulence and type of bacteria present in the area and the presence of other substances or foreign elements, as oils or vegetable seeds. The presence of the common pus-producing staphylococci may lead to abscess formation, virulent pneumococci to a croupous pneumonia, and the anaerobic fusiform bacillus with its symbiotic spirochete of Vincent to pulmonary gangrene. The atelectasis then may be a forerunner for postoperative pneumonia, aspiration pneumonia, deglutition pneumonia, collapse pneumonia, lung abscesses, lobar pneumonia or pulmonary gangrene.

4. Hemorrhagic bronchopneumonia is seen as dark red, patchy areas of consolidation of the lung, usually the result of a streptococcus infection that supervenes upon the second or third day in influenza or in lungs damaged by gases, steam or smoke.

5. Hypostatic or postural pneumonia. The primary lesion is a passive pulmonary hyperemia or a hypostatic congestion of dependent portions of the lung frequently seen in debilitated and bedridden patients. This engorgement of veins, giving

hemorrhagic diapedesis into the alveoli containing or receiving bacteria, is responsible for the pneumonitis.

6. Influenzal pneumonia. Typically this is seen in the endemic, epidemic or pandemic waves characterized by extreme prostration, and early a pulmonary edema with such transudation of fluid that the patient may literally drown. It is common to see on the second or third day a superimposed streptococcic infection and a hemorrhagic bronchopneumonia.

7. Gangrenous or foreign body pneumonia. This may be seen as a tissue destruction of massive type secondary to aspiration of foreign bodies of various kinds, especially beans, buttons, needles from the Christmas tree, popcorn, cockleburs, watermelon seed, mucous plugs, blood clots, pieces of tissue from nasopharynx, or be induced by infection with the Vincent's organisms; namely, the fusiform bacillus and spirochete of Vincent.

8. Verminous pneumonia. Intestinal parasites or their eggs are found in the feces of some children and even some adults who have chronic bronchitis and bronchopneumonia. The pulmonary and bronchial lesions which may involve either or both lungs are associated with a general anemia and digestive disturbances. To remove the intestinal parasites by proper therapy does away with the bronchitis, the bronchopneumonia and the general anemia. The pulmonary involvement is entirely incidental to the passage of one or another type of these intestinal parasites through the lung fields as a part of their natural or biologic cycle. These come from the intestine where the ova have matured with the larvae passing through the intestinal wall to blood vessels or lymph vessels, then carried to the right side of the heart and pass to the lungs through the pulmonary artery. At some portion of this vascular system they lodge, erode through the wall to reach the bronchus, and in this passage there occurs an inflammation of the lung tissue. From the bronchus the parasite is coughed up to the pharynx, swallowed and carried back to the digestive tract to develop into adult forms which give off ova and the cycle is then begun anew.

III. Chemical pneumonia. The inhalation of atmospheres too rich in oxygen, irritant gases, smoke, steam and certain chemical agents as silica lead to inflammatory changes of the bronchi and lung parenchyma. These changes may be due solely to the chemical and not necessarily accompanied by bacterial invasion, though this commonly occurs. The more acutely acting irritants as gases, smoke and steam cause a catarrhal inflammation with desquamation of lining epithelium and an outpouring of fluid. In severe cases gangrene may occur. In other instances the desquamated epithelium and exudate plug the bronchial tree and become responsible for an atelectasis or a collapse pneumonia. Patients suffering acute chemical pneumonia have cyanosis, dyspnea, symptoms of pressure on chest,

an extremely irritating cough and a tendency to hemoptysis. In the more chronic types there is a lowered local tissue resistance to tubercle bacilli and other chance infections.

IV. Post-traumatic. Some injuries to the head with incident disturbances of normal respiratory movements are not uncommonly followed by pneumonia. Injuries to the thoracic cage, particularly the posterior portion, often are followed by pulmonary manifestations on the second or third day. These essentially arise from hemorrhages into the air vesicles plus bacterial invasion in this ideal culture medium. This type has a high mortality rate and is most commonly seen among children who receive falls or blows in play or workmen who have crushing injuries or blows to their spines.

V. Embolic, pyemic or septic pneumonia. The pyemias and septicemias of puerperal and typhoid fever, wound, furuncle, endocarditis or other origin, rather commonly through embolic localizations of the causative bacteria in the branches either of the pulmonary or bronchial arteries, give primarily an arteritis, and secondarily an invasion of the lung parenchyma. This pneumonic lesion is termed circumvascular, or strictly circumarterial, to distinguish it from similar localizations that may occur around bronchi and lymphatics. Many small abscesses with small areas of necrosis constitute the essential pathology, though fewer, larger abscesses may result from fusion of these and progress to more marked necrosis or gangrene.

VI. Interstitial or fibrous pneumonia. This chronic productive inflammation involves the connective tissue framework of the lung, the alveoli or air spaces, and often the blood vessels. The new formed connective tissue which may fill and replace alveolar spaces, compress or partially obliterate alveoli, bronchi or blood vessels, may follow a pneumococcus lobar pneumonia, influenzal pneumonia, any of the bronchopneumonias, chronic bronchitis, atelectasis, pleuritis, inhalation of certain dusts, fibers or chemicals, or it may be primary as in syphilis. It is particularly seen in pneumonias with delayed resolution and in silicosis.

VII. Tuberculous pneumonia. Specifically this is caused by the tubercle bacillus and may result in one of a variety of more or less simple or extremely complex types of pulmonary inflammation, as focal or miliary tuberculosis, the solitary Ghon tubercle, tuberculous bronchopneumonia, nodular or diffuse lesions, destruction and cavitation, fibrosis or calcification. Volumes have been written in describing the gross anatomic and microscopic features of the primary and secondary lesions in this type of pulmonary disease.

VIII. Syphilitic pneumonia, pneumonia alba or white pneumonia, is a finding of congenital syphilis due to a proliferation of new cellular tissues in the walls of the air spaces and an exudate largely of epithelial cells within them. It is particularly seen

in the stillborn infant or the child who dies in early infancy. The involvement may be patchy, lobular or lobar in distribution. Rarely in later life, in acquired syphilis essentially, there may occur localized gummata or an interstitial type of pneumonia.

#### ASSOCIATED PATHOLOGY, COMPLICATIONS AND SEQUELAE

*Associated Pathology.*—It is common that the pulmonary lesions in pneumonia are looked upon as being the essential as well as the primary ones. However, others are rather consistently found, especially and predominantly in pneumococcus pneumonias, and are often of more serious import. These changes that ride in the saddle with pneumonia are termed associated pathology. Briefly these are:

1. *Pleurisy.* Pleural involvement occurs in every moderate or major inflammation of a lung. This is easily understood when one remembers the subpleural arborization of lymphatics that begins in the depth of lung tissue. The dry friction rub and the pleural pain at the onset of the disease and often during its progress are well known to every practitioner of medicine and patient who has had pneumonia.

2. *Bronchitis and bronchiolitis.* Oftentimes the primary lesion is in a bronchus before it reaches the lung parenchyma. When not, the bronchial tree is certain to be involved because it is through this route that much of lung exudations and the causative agents are removed. The bronchitis with its incident irritation and cough is often a troublesome manifestation.

3. *Bacteriemia.* In embolic pneumonia, the bacteriemia or septicemia, with organisms coming from vegetations of heart valves, wounds, furuncles, osteomyelitis or pharyngitis, antedates the pulmonary lesion. In pneumococcus pneumonia predominantly, bacteria are found in the circulating blood. I have obtained approximately 90 per cent of positive blood cultures when repeated cultures were made in the early stage of the disease. Solomon recently recorded positive blood cultures in 73 per cent of a group of patients having Friedlander's pneumonia.<sup>3</sup>

4. *Compensatory emphysema.* Nature's effort to compensate for consolidated or destroyed lung tissue typically results in a vesicular emphysema of the uninvolved lung portions.

5. *Atelectasis.* Unremoved exudate in the bronchial tree plus edema and swelling of mucous membrane often decreases inflation in other portions of the lung and brings on obstruction atelectasis. Pleural effusions frequently give compression atelectasis.

6. *Lymphadenitis.* The lymph vessels originating in the lung substance and draining directly toward the tracheobronchial nodes pass through several small nodes interplaced at the bifurcation of blood vessels and bronchi, therefore these and



the tracheobronchial nodes receive bacteria and toxins and thus are damaged.

7. Albuminous or toxic degeneration of visceral organs. The liver, kidneys and myocardium are common sites for minor or major degrees of degeneration in pneumonia as in other acute infectious diseases. These alterations manifest themselves by disturbances in function of such organs.

8. Cardiac hypertrophies and dilatations. The heart, particularly the right side, is called upon for more work whenever lung tissue is consolidated or otherwise thrown out of condition. This leads primarily to the hypertrophy of its musculature. As a result of this overwork without an increase in nourishment, added to the albuminous degenerative changes of the myocardium, the right chambers commonly dilate. The usual death in pneumonia is of cardiac, not pulmonary, type.

9. Neutrophilic hyperleukocytosis. In the pneumonias produced by pneumococci, staphylococci and streptococci, the common pyogenic infecting agents of the lung, there occurs a rise in polymorphonuclear neutrophil percentage. This rise is more or less in proportion to the degree, dose and virulence of the causative agent. In pneumococcus pneumonias the values frequently are 90 per cent or above. So long as the infection is present these percentages remain high. In patients who have a good resistance the total cell count will be proportionately increased to high values. In pneumococcus types it is frequent that when there is good resistance the total cell count is above 30,000 and often considerably higher. So long as there is a proportionate rise in polymorphonuclear neutrophils and the total cell count, prognosis is good.<sup>4, 5</sup>

*Complications and Sequelae.*—Those less frequent tragedies and hazards that result from the primary pulmonary diseases or the associated lesions may be:

1. Extension of the infection to other and uninvolved lung fields.

2. Delayed resolution or termination by lysis. This is much more likely to occur in undernourished, debilitated individuals, or those suffering from some other concurrent major disease as tuberculosis or nephritis.

3. Organization pneumonia. The exudate instead of becoming fluidified and absorbed or coughed up, is converted by granulation tissue into fibrous or scar tissue and thereby develops into a chronic interstitial or fibrous pneumonia.

4. Pulmonary abscesses. Through thrombosis or embolism of blood vessels, from involvement of lymph nodules or as a result of strong chemical irritants and particularly in pyemias, lung abscesses may occur.

5. Pulmonary gangrene. This lesion may occur as a complication in any pneumonia, particularly when there is present locally a foreign body. It is not to be confused with primary gangrenous pneumonia.

6. Bronchiectasis. As the result of damage to the

bronchial tree at one or more places, there occur local weakenings which are followed by cylindrical or sacculated dilatations or cavities communicating with a bronchus or a bronchiole by one or more openings. These are often troublesome complications and lead to permanent pulmonary defects.

7. Arthritis. Involvements of one or more joints in pneumonia, especially when of a pneumococcus type are well recognized as a complicating factor in this disease.

8. Peritonitis. Peritonitis may occur from blood-borne infections or a spread of infection through the diaphragm. Commonly at autopsy there is no excess of fluid within the peritoneal cavity because death has occurred before time has permitted the vascular and cellular reactions to take place that give rise to exudate. Many patients, especially children, with peritoneal irritations present a complex clinical picture that is embarrassing and that may lead to inadvisable and unnecessary abdominal surgery.

9. Otitis media. Just as inflammation of the middle ear and of the mastoid may be a predisposing factor to pneumonia, so they may likewise be complications of this disease.

10. Meningitis. Inflammation of the cerebral or cerebrospinal meninges, like the peritoneum, may occur in pneumonia, especially of a pneumococcus type, without exudation and the patient at autopsy reveal a marked vascular engorgement of the meninges but no exudation. Spinal punctures at such stage would reveal an increased fluid pressure and globulin content but probably little or no increase in cell count or abnormal cells.

11. Digestive disturbances with flatulence. Pneumococcus pneumonia patients often present digestive complaints and much abdominal discomfort with flatulence.

12. Nephrosis to nephritis. The elimination of bacterial exotoxins or endotoxins and toxins derived from destruction of tissue and disintegration of the cellular exudates, commonly causes damage to renal tubular epithelium now recognized as nephrosis. With the disappearance of the various toxins there is an abatement of kidney manifestations and a return to normal function of these organs. In more severe cases the lesion may go beyond the stage of degeneration into one of the types of true nephritis with permanent structural changes in the kidney glomeruli, tubules, stroma or blood vessels.

13. Endocarditis. Damages of the mural, chordal or valvular endocardium, particularly of the left side of the heart, are more likely to occur in streptococcal infections of the lung but may be found in any pneumonia. These may be seen as simple verrucose or fibrinous, purulent or fibrinopurulent vegetations or ulcerations. Secondary to these vegetations there commonly occur additional or new emboli to various parts of the body with the incident events and lesions common to these. Pa-

tients who survive may have either valvular stenoses or absolute valvular insufficiencies.

14. Pericarditis. Effusions in the pericardium as serous, serofibrinous or fibrinopurulent character are more likely to occur in pneumococcal pneumonia. These may become massive and lead to extreme cardiac embarrassment or death. They are recognized by an increasing breadth of the heart area with an expanding base or lower level. Roentgen ray visualization offers confirmation.

15. Myocarditis. Myocardial damage may be minor as simple albuminous degeneration, more marked as fatty degeneration, or as a true myocarditis with softening or necrosis in patchy or more diffuse areas. This is evidenced by low or falling blood pressure, a thin, thready, fast pulse, cyanosis and often coldness of distal parts, and is always a warning for a guarded prognosis. Most of the deaths from pneumonia are due to myocardial damage.

16. Thrombi, emboli and infarctions. Emboli as groups of bacteria from the pulmonary lesions may be swept into deep or more distal portions of the lung to the left or right side of the heart and then distributed back to the lungs or elsewhere in the systemic arterial circulation. Those arising from secondary cardiac vegetations are carried through the respective vessels that take blood from left and right ventricles. Thrombi may occur as vegetations on the heart valves, the chordae tendinae, the lining endocardium, in the pulmonary vessels or in more remote vascular channels as the femorals. Thrombosis may occur at any stage in pneumonia and is not a rare complication during the period of convalescence.

17. Neutrophilia without hyperleukocytosis. A patient with a pneumonia caused by pyogenic bacteria, especially the pneumococcus or the *Bacillus* of Friedlander,<sup>3</sup> where the total white cell count remains low or does not rise in proportion to the rise in neutrophil percentage, calls for a guarded prognosis. When the neutrophil percentage is high, 90 per cent or above, and the total white cell count is 12,000 or less, the prognosis is always grave. If the total white blood cell count has been high, as from 30,000 to 40,000 or more then drops markedly, say to 10,000, without there being a drop in neutrophil percentage or a marked improvement in the general condition, it signifies that the patient's resistance has been broken and his condition is desperate.<sup>4,5</sup>

18. Anoxemia, or deficient aeration of blood, is dependent upon inadequate maintenance of cardiac function as well as upon the amount and degree of pulmonary damage as consolidation, cavitation, atelectasis and emphysema.

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#### DISCUSSION

DR. HURLEY L. MOTLEY, Columbia: The first thing I want to comment on is the formation of edema. The production of edema in the body is dependent on three chief factors of which one or all may be responsible: First, the osmotic pressure of the blood proteins, called the oncotic pressure, tends to keep fluid in by osmosis; second, the hydrostatic pressure of the blood which shows a progressive decrease in the smaller arterioles and capillaries tends to push fluid out; third, capillary permeability regulating diffusion. Normally the balance between the oncotic pressure on the one hand and the hydrostatic pressure on the other are so balanced in the capillaries that neither edema nor dehydration results. The normal state of the capillary permeability permits diffusion of the crystalloids in either direction, but colloids such as blood proteins are held back.

In pneumonia, there is an upset in the normal hydrostatic pressure of the blood due to the marked increase of venous pressure. This pressure can readily be determined by the direct method of inserting a needle in the median basilic vein connected to a water manometer. The increased venous pressure results in a rise of the hydrostatic pressure in the capillaries thus tending to push more fluid out. Dr. Neal has pointed out the presence of circulating toxins in the blood in pneumonia. Toxins alter normal capillary permeability as well as the anoxemia present and both are active factors in producing an upset in this disease. The pathological involvement in the lungs prevents proper oxidation of the blood hemoglobin which adds to the burden of the heart already hampered by the increased venous pressure and pulmonary obstruction and as a result sudden heart failure is common. The marked increase in respirations is not entirely due to the action of toxin and the anoxic condition on the respiratory center, but partly by an increased sensitivity of afferent nerve endings in the lungs resulting from edema due to increased venous pressure and altered capillary permeability.

In 1936 serum was being used for the treatment of types I and II pneumococcus pneumonia at the Peter Bent Brigham Hospital in Boston. The rapid recovery of patients after serum treatment was remarkable. I have seen the temperature drop from 103 to normal overnight after serum administration. The results were so beneficial that in 1936 the State of Massachusetts was supplying free serum to doctors who had cases of types I and II pneumonia. It is a simple test to type sputum for the pneumococcus and determine the type of serum needed. All that is necessary is a microscope, methylene blue stain and typing sera. The typing can be done in from ten to fifteen minutes. Speed of administration of serum is an essential feature for success. After four or five days it is of little value. I am looking forward to the time when serum will be more available in the State of Missouri for lobar pneumonia cases of types I and II especially.

As to the use of oils in the treatment of upper respiratory infections, there has not been as much work done on this as could be desired. The present status is that mineral oils are irritating to mucous membranes, essentially unabsorbable and may lower the resistance so that a bacterial or chemical pneumonia could take place easier. So much has this been the case that at the present time ephedrine in physiological saline solution rather than mineral oil is used because the latter is irritating to the mucous membranes.

DR. JAMES A. HILL, Jefferson City: Since we know the etiology of pneumonia it prepares us to prevent it, and prevention is worth a great deal more than cure. Of



course we first want to find out the habits of life, the vitamins in the diet which keep up the antitoxin resistance. Good nourishment is a serious problem among the poorly paid laborers in our country and those living in crowded quarters. However, the question I want to raise is that of instillation of oil into the nasal passages and even into the trachea. Our radios night after night are used to advertise oil, shouting aloud the merits of mineral oil loaded with menthol and camphor. It is my understanding that mineral oil that gets into the

lung is not absorbed but remains as a foreign body and slowly causes a great deal of lung infection and complication. I also understand that experiments have shown that if bland vegetable oil is used it will be absorbed and produce no distress in the lung and will not become a foreign body. That is a question I would like to hear discussed, as well as the use of nose drops in which there is menthol or camphor or both. I ask that question to start discussion because I think it is important to the public and to us.

## SYMPOSIUM ON PNEUMONIA

### BIOLOGY OF PNEUMONIA

WALTER BAUMGARTEN, M.D.

ST. LOUIS

The biology of a disease represents its life history, a characteristic course that it pursues which the host eventually controls or to which he succumbs.

Infectious diseases pursue a more or less constant and definite course, varying with the organism. The life history of a given infectious disease is determined by two general factors: (1) the virulence of the organism and the toxemia which it produces, and (2) the organs and tissues which the organism invades and the structural changes which this invasion evokes. Individual organisms show a predilection for various tissues and organs and type of reaction which they provoke.

The life history of lobar pneumonia is determined chiefly by some type of pneumococcus. The pneumococcus has a predilection for localization in the lungs where it leads to definite structural changes which (1) mechanically reduce the efficiency of the respiratory apparatus and (2) form a breeding ground for reproduction of the organism accompanied by the biproducts of its metabolism and its toxins and from which it may secondarily invade other tissues such as the blood and through the blood remote organs.

The toxemia which the pneumococcus causes provokes a fever of characteristic onset and course, a neutrophilic leukocytosis and poisoning phenomena in certain vital organs, notably the brain, the vasomotor mechanism, the heart and the kidneys. The virulence of the toxins produced forms a most important factor in the ability of the host to resist the disease.

The mechanical changes in the lungs provoked by the pneumococcal invasion reduce in varying degree the available respiratory surface. The immediate result of this is a diminished absorption of available oxygen with a varying degree of anoxemia and a corresponding impairment of the necessary normal tissue metabolism. As this approaches the margin of reserve, the destructive effect of the toxemia increases and tends to destroy the resistance of the host. The increased respiratory rate is an effort to make good the loss of oxygen due to the reduced respiratory surface.

The impairment of the cardiac strength and the loss of vasomotor tone due to the toxemia further accentuate the mechanical effects of the reduced respiratory surface.

The control of the progressively unfavorable situation created by this sequence of conditions depends on the ability of the host to produce sufficient antibodies to neutralize the toxemia and inhibit the growth of the invading organisms or to destroy them. The success with which this is done depends on the virulence of the organism and the resistance of the host. This balance has in recent years been shown to depend on the type of the pneumococcus involved in each infection. For each type the success with which the host develops antibodies (the mortality) has become well recognized.

Pneumonia is a self-limiting disease in which the success of the resistance of the host depends on the degree of toxemia and the mechanical impairment due to the invasion by the organism and the final antibody response of his tissues. The disease runs a course, when recovery occurs, of a relatively few number of days. It has a definite pattern with definite constitutional symptoms, definite anatomical signs and definite laboratory findings. For each type of pneumococcus a definite mortality rate has been recognized.

With the development of an efficient antiserum the mortality rate in some of the types has been definitely diminished by successfully terminating a toxemia which, in the individuals in this percentage group, would not otherwise have been neutralized. The antiserum also has shortened the period of illness, in those who would have recovered in any event, by neutralizing the toxemia earlier than would otherwise have been the case. In all of these cases the toxic element has been eliminated in the life history of the disease. The tissue changes frequently have not kept step with the improvement in the toxemia but have followed more nearly the course which would have been the case without the early elimination of the toxemia. The healing of the tissue changes in the lungs therefore should be regarded as often independent from the recovery

from the infective process and its toxemia, and the improvement in constitutional symptoms should be evaluated separately from the organic changes which have occurred so that the latter may recover in the usually expected period.

This apparent independence of the infective process per se from the course of the healing of the pathological process which it inaugurated is important in the interest of the patient and the avoidance of complications.

## TYPES AND TYPING OF LOBAR PNEUMONIA

HOLLIS ALLEN, M.D.

ST. LOUIS

With the increased knowledge of the benefits of type specific serum in the treatment of lobar pneumonia, the question of rapid and accurate specific typing has become of increasing importance. It has been proven that the value of serum treatment is much greater the earlier it can be administered and for this reason rapid typing adds materially to the expected results of such treatment.

The standard method of typing which consists of injection of sputum into the peritoneal cavity of a mouse and its recovery from the peritoneal cavity in quantities sufficient for agglutination tests requires from twelve to twenty-four hours.

The Neufeldt reaction, as adopted by Sabin, permits the typing of pneumococci directly from the sputum and may be accomplished within a half hour from the time the sputum reaches the laboratory. This method will successfully type from 80 to 90 per cent of the sputums that can be typed by the mouse method, and in certain instances it probably gives us more specific information than the mouse method.

The technic is elaborate enough so that it might not be successfully done by untrained technicians, but is standardized to the extent that in trained hands it is universally successful. Every hospital that makes a pretense of running a laboratory should be qualified to make the Neufeldt typing of pneumococci on a moment's notice, and the typing

can be done in any qualified clinical laboratory. Typing serum is available for the entire thirty-two types, and with the probability that serum for the treatment of all types will soon be on the market all laboratories should be qualified to type any of the thirty-two known strains of pneumococci.

Care should be taken in obtaining a sputum specimen to get as representative a specimen as is possible and not merely the saliva or the mucous secretions of the upper respiratory tract. In certain instances such as in children where sputum from the lungs cannot be successfully obtained, typing is carried out from swabs taken from the child's throat. The swabs may be introduced and the child caused to cough. Specimens obtained in this manner are sent immediately to the laboratory before drying has occurred.

If for any reason typing is unsuccessful in the first specimen, repeated specimens in a definite case of pneumonia should be examined as representative bacteria are not always present in all sputums. The mouse method will determine from 10 to 20 per cent more cases than will the Neufeldt reaction and it is suggested that unsuccessful typings should be carried out by the mouse method.

Time and accuracy are the two essentials from the viewpoint of the laboratory if successful treatment with type specific serum is to be carried out.

## TECHNIC OF THE DOSAGES AND THE USE OF ANTISERA FOR LOBAR PNEUMONIA

JOHN J. HAMMOND, M.D.

ST. LOUIS

The efficiency of specific serum treatment of lobar pneumonia is being raised to a higher plane every day, and properly so. There are certain important points concerning the use of specific sera which I think bear stressing. If you are going to give serum, give it early and give adequate dosage. This, of course, brings up the question of early diagnosis of our pneumonia cases and if there is any doubt use the roentgen ray as it has been repeatedly demonstrated that the roentgen ray at times reveals the lesion long before the clinical signs manifest themselves. The most effective time

for serum is before the fourth day of the disease, as the mortality rate is much higher in cases in which the serum is withheld to and beyond this phase of the disease.

The question of dosage is more or less an individual problem, but on an average a fairly sick patient without bacteriemia will require from 60,000 to 100,000 units of serum in twenty-four hours; a case with bacteriemia double to treble this amount. This is merely an estimate as to the amount of serum required because it varies with the extent of pulmonary involvement as well as the amount of tox-



emia. Do not discontinue the serum if definite improvement is noted until the patient shows a normal temperature and pulse curve.

The question of a dosage schedule is important, and the following is advised by Bullowa: First dose, 1 to 2 cc. intravenously. After a two hour interval give second dose, rest of vial (if first is well taken) intravenously. At two hour intervals give from 10,000 to 40,000 units intravenously until maximum has been given or normal pulse and temperature curve occur.

Foreign protein reactions, such as chill and fever, at times occur, usually after first injection. The injection should be stopped immediately and the succeeding one delayed until temperature and pulse stabilize themselves. Antipyretics, as aspirin, will often control and prevent these bouts of fever. These reactions at times can be quite severe and precipitate circulatory collapse in older people, but ordinarily with the more concentrated and refined sera of today the more severe reactions are decidedly uncommon.

Allergy is less of a problem than formerly since the advent of rabbit serum. Previous to this, all

serum was developed in the horse and sensitivity to this animal created quite a problem which now can be obviated by substituting the rabbit serum. Precautions have to be taken before a patient is given either horse or rabbit serum to test him either with the intradermal or conjunctival test for sensitivity. Any patient showing definite allergy should be given an extremely diluted dose of serum subcutaneously and the dose raised rapidly at frequent intervals until he is able to take an effective amount of serum. It is advisable to have a sterile syringe and an ampule of epinephrin convenient in anticipation of the likelihood of one of these reactions.

Where formerly the serum was available only for types 1 and 2 pneumococci, it is now available for many of the other types and shortly it is promised serum for all thirty-two types will be available commercially. Due to the fact that effective serum for all types of pneumococci is being made available, it is up to the medical profession to use this serum and acquaint itself with its intelligent use if the appalling mortality rate of this disease is to be brought down to a reasonable figure.

## PROGNOSIS IN LOBAR PNEUMONIA

CHARLES H. NEILSON, M.D.

ST. LOUIS

The object of all the medical procedures in the treatment of any disease, and particularly lobar pneumonia, is the cure of the patient. The cure of the patient sick from pneumonia is dependent upon many factors, and the death rate, in spite of all kinds of treatment, is in the neighborhood of 30 per cent. There is a close relation between the death rate and the age of the patient. The extremes of life have a higher death rate than other periods. The death rate in private practice is probably lower than in hospital practice because patients having the most severe type of lobar pneumonia are usually hospitalized.

The prognosis, therefore, depends

(1) On an early diagnosis. It is the duty of the physician to study his patient and make as early a diagnosis as possible.

(2) In these modern days, early typing in the lobar pneumonia patient is paramount and the use of the appropriate antiserum will cause a lessened mortality in some types of lobar pneumonia infection. It is probably true that types 1, 2 and 3 have the highest death rate; particularly is this true of types 2 and 3. The age of the patient plays some part in the high death rate of type 3.

(3) Other factors which influence the death rate are the extent of the infection, the occurrence of complications, especially when there is septicemia. There seems to be some connection between the fatality of pneumonia and the question of a blood invasion.

(4) Race, sex and occupation seem to have but little influence on the death rate in lobar pneumonia. It is known that in alcoholic addicts there is a much higher death rate than in individuals who are not alcoholic addicts. The general condition of the patient preceding his infection is a factor in the prognosis.

(5) Prognosis is influenced in many cases to a considerable extent by the proper and careful treatment of the individual during convalescence. The alert physician will always watch for such signs and symptoms as empyema and lung abscess. These can be determined by the signs and symptoms and by the increased leukocyte count.

(6) We wish to stress the following facts as aids to a good prognosis:

1. Early diagnosis.

2. Early typing and the use of the serum in those cases which have a type for which an antiserum has been manufactured.

3. We feel and know that many cases of lobar pneumonia are overtreated, that is, too many antipyretics, too much digitalis, improper use of vaccines, immunogens, etc., are indiscriminately used. Lobar pneumonia is a self-limited disease and watchful waiting is often the best treatment.

4. Careful attention should be paid to the treatment of the patient during his convalescence, and this attention is needed in all patients whether they have received the serum or not.

## THE ST. LOUIS HEALTH DIVISION PROGRAM FOR THE CONTROL OF PNEUMONIA

H. I. SPECTOR, M.D.

ST. LOUIS

On December 6, 1938, the St. Louis Health Division in cooperation with the State Board of Health and the United States Public Health Service will inaugurate an educational campaign on the "Control of Pneumonia" in St. Louis through the medium of a symposium on "Pneumonia," as follows:

### SYMPOSIUM ON PNEUMONIA

1. The Health Division's Program for the Control of Pneumonia in St. Louis (10 minutes), Dr. J. F. Bredeck.

2. Facts and Figures on Pneumonia in St. Louis (10 minutes), Dr. E. Sigoloff.

3. Diagnosing Pneumonia Early: (a) Through Clinical Methods (10 minutes), Dr. Lawrence Thompson; (b) Through Sputum Typing (10 minutes), Dr. J. C. Willett.

4. Treating Pneumonia Early: (a) With Specific Sera (10 minutes), Dr. Ralph Kinsella; (b) With Oxygen and Other Methods (10 minutes), Dr. A. J. Kotkis; (c) Symptomatic Treatment (10 minutes), Dr. G. O. Broun.

5. Diagnosing and Treating Pneumonia in Children (10 minutes), Dr. John Zahorsky.

6. Discussion to be opened by Dr. C. D. Head, Jr., Passed Assistant Surgeon, United States Public Health Service; Drs. Charles H. Neilson and Dr. H. I. Spector.

7. Moving Picture on Pneumonia, "A New Day."

Pneumonia has long been a major health problem in St. Louis just as it has been throughout the United States. It is believed that with the early use of specific antipneumococcus serum the mortality from pneumonia could be reduced 50 per cent.

With this view in mind the United States Public Health Service, through Surgeon General Parron, has started a campaign for the control of pneumonia throughout the United States. St. Louis is fortunate in being one of the few areas to be selected for the control of pneumonia and for this purpose \$15,000 has been made available to the St. Louis Health Division through the State Health Department for the purpose of supplying sera for typing to the various hospital laboratories and for the further purpose of supplying antipneumococcus therapeutic sera to the medical profession for the treatment of pneumonia in residents of St. Louis.

The objectives of the St. Louis Health Division and the United States Public Health Service in the pneumonia program is, first, to reduce the mortality from pneumonia through the use of serum and, second, to determine the general incidence and especially the type incidence of pneumonia in St. Louis.

For the purpose of uniformity a bacteriologist from the United States Public Health Service was sent to the St. Louis Health Division to demonstrate to hospital bacteriologists and technicians, as well as those of private laboratories, the technic of sputum typing. The demonstrations are being con-

ducted now and so far practically all of the larger hospitals have cooperated.

Therapeutic antipneumococcus horse serum for types 1, 2, 5 and 7 will be distributed free of charge to physicians to be used for resident pneumonia patients provided that they supply the Health Division with a sample of sputum from the patient for typing and fill out the necessary forms.

Practically all the major hospitals in the city will have twenty-four hour typing service and will have Health Division horse serum available for the treatment of types 1, 2, 5 and 7, the only types that will be released from the Health Division for general distribution. At the same time cooperating hospitals have promised to deliver a sample of sputum of each pneumonia patient to the Health Division Laboratory for complete typing. This is necessary for incidence type determination. Consulting service to the general practitioners, mainly for the purpose of assisting with the administration of serum, will be available to the general practitioner through the Health Division.

Therapeutic sera will be given to the general practitioner if the sputum of his patient has been typed either in a private laboratory, whose technicians have witnessed and are familiar with the technic of the United States Public Health Service as demonstrated in the Health Division Laboratory, or after the sputum has been typed by the Health Division Laboratory.

The Health Division Laboratory will be the major serum supply depot and will be available for typing purposes and for the distribution of sera to the general practitioners daily from 8 a.m. to 9 p.m. including Sundays and holidays.

The initial amount of serum to be released will be 60,000 units for type 1 and 100,000 units for types 2, 5 and 7. Additional amounts will be given if necessary.

At the time serum is released each physician or hospital will receive a special Pneumonia Form and will be required to fill this out and send it back to the Health Division when the case has been terminated. This is necessary for the study of the effectiveness of serum therapy.

Physicians will also be urged to take blood cultures early in the disease and frequently during the course of the disease. This will be a guide to the Health Division as to the amount of serum to be released since cases with positive blood cultures would require larger doses of serum.

The St. Louis Health Division asks for the further cooperation of the medical profession and of all the hospitals in the city in this worth while undertaking.

This plan has been approved by the St. Louis Medical Society and the Mound City Medical Forum.

For further information call the Health Division, Pneumonia Control, MAin 5560, Station 256.



## PNEUMOCOCCUS TYPING AND SPECIFIC THERAPY

EDWIN HENRY SCHORER, M.D.

KANSAS CITY, MO.

The Health Department of Kansas City is fully convinced of the efficacy of treating the lobar pneumonias with antiserum.

It has been well established that pneumonia caused by the pneumococci is a contagious disease and it is well to regard the pneumonias caused by them as contagious and to institute the usual precautions resorted to when other contagious diseases exist.

The municipal and all private hospitals of Kansas City are equipped for typing pneumonia and the pneumococcus serum is available on short notice.

For the present it must be evident that the Health Department will make diagnoses when requested but will supply serum only to patients in the mu-

nicipal hospitals. The clamor for type diagnosis and specific treatments would probably become so great that, except for this restriction, determinations of type and administration of specific serum would not be confined to clinical pneumonia, and, if that happens, it would be impossible to handle all the cases.

Determinations of the pneumonic type and the administration of a specific serum in a known case of pneumonia will greatly aid in the treatment of pneumonia and the death rate, when this is properly done, would in all probability be somewhat lowered. However, carelessness in typing and improper methods of giving the antiserum may bring into disrepute a scientific method which is now well established.

## HYPERTHYROIDISM

NEW CLINICAL AND LABORATORY CONCEPTS

RALPH V. BYRNE, M.D.

LOS ANGELES, CALIF.

The manifestation of hyperthyroidism by cardiac symptoms has long been recognized and designated by the term thyrocardiac. Frequently overlooked and treated without recognition is heart disease in which hyperthyroidism develops but in which the symptoms are entirely cardiac and accentuated by the hyperthyroidism. The symptomatology is determined by the mechanics of the cardiovascular system and the damage to the heart is usually due to previous rheumatic disease, lues or arteriosclerosis. The most difficult to recognize are those cases in which the cardiac condition is progressive because the hyperthyroidism is imposed on a rheumatic or luetic heart and hypertension with angina or fibrillation, ascites, edema and congestive failure develop. This type of cardiac patient can be made ambulatory with the removal of the hyperthyroidism while the usual cardiac regime by itself will bring poor if any results. The presence of the hyperthyroidism may have been chronologically far in advance of the incidence of the direct cardiac damage, acting intermittently or insidiously with slight elevation of the basal metabolism rate and only masked signs of the toxic thyroid, or it may come on later in life progressing rapidly and precipitating an acute cardiac crisis.

The thyroid gland does not always reveal clinical signs of pathological condition. There may be a small palpable adenoma or a slight diffuse enlargement, or there may be nothing unusual pal-

pable. The thyroid may enlarge in two directions that cannot be explored by the examining finger, downward beneath the sternum and posteriorly between the trachea and esophagus. The gland may undergo pathological changes within the parenchyma and not produce any outward enlargement that is of diagnostic help. The so-called "burned-out" thyroid is not necessarily so well burned as we have been led to believe in the past and the myxedematous appearance of the patient is misleading.

The decline in the incidence of the active exophthalmic type of goiter in young persons is probably the result of the universal use of iodine feeding in the so-called goiter districts following the investigations of Marine and Lenhardt, but the number of cardiac patients with hyperthyroidism is increasing with the added knowledge of this condition and better diagnostic methods. It is with a view of placing hyperthyroidism as a probable inciting cause of heart disease, that this paper is presented.

### SIGNS AND SYMPTOMS

For purposes of discussion these cases are best divided according to age as the pathological change is essentially that of toxicity of the thyroid gland, but it is not measurable by the usual methods because a previously damaged heart is frequently the recipient of this toxicity and the focus of all the symptoms. I am purposely avoiding the term thyrocardiac because the gland is the offender but the disease is clinically and symptomatically a cardiac disease. The age of 40 is an arbitrary point, but a study of statistics supplied by those most interested in thyroid conditions will show an increase in the incidence after 40 and a definite change in the type of cardiac manifestation. Before the age of 40 the cardiac change is primarily functional in char-

acter, or influenced by preexisting damage following rheumatic infection. After 40 the degenerative diseases take their toll of cardiac and vascular reserve and the disease is organic in manifestation.

Simple tachycardia in a person under 40, as the result of hyperthyroidism, is essentially a disturbance in the function but may be as incapacitating to the individual as any of the more complicated forms of heart disease. This acceleration of the heart beat may be paroxysmal but usually there is a definite persistent elevation above the normal which does not respond to sedation or rest. These people are usually high-strung, energetic and frequently their only complaint is palpitation and easy fatigue. Examination of the heart shows a distinct apex thrust, diffuse in character, and there may or may not be a systolic murmur at the apex which is easily confused with a mitral stenosis. Enlargement of the heart is not present and decompensation does not occur; if an elevation of the blood pressure is found it consists in an elevation of the systolic pressure, a lowering of the diastolic pressure and an increase of the pulse pressure. The usual chain of symptoms indicating hyperthyroidism are absent or incomplete so that unless hyperthyroidism is kept constantly in mind it will most likely be overlooked. Among signs and symptoms should be mentioned the characteristic stare of the eyes with widely dilated pupils; the slight exophthalmus which may result in only moderately prominent eyeballs; slight widening of the palpebral fissures; a suggestion of lid lag; flushing of the skin about the neck and throat; excessive perspiration underneath the arms and in the palms of the hands and pigmentation of the skin. Tremor may be present or absent, but these people will always be alert, apprehensive, restless, tire easily and always on the go and given to occasional emotional outbursts. Mentally these people are outstanding but usually never acquire success because of their inability to concentrate and their easy fatigability. Gastro-intestinal symptoms are not present and weight loss is of no consequence as the metabolism is not sufficiently elevated to result in any rapid loss; however, these patients are slender and do not gain weight with age as the more normal of us are inclined to do. Last, but not least, is that these cases are always under 40 years of age and cardiac decompensation with congestive failure never occurs. Lahey and Hurxthal<sup>1</sup> in studying the end result in three hundred thyrocardiac patients found congestive failures only when associated with previous heart damage. This type of hyperthyroidism is then essentially cardiac in symptomatology and not associated with the more profound changes that go with high elevations of the metabolism of the body, or a more severe toxemia. If it were possible to measure the increased metabolism of the heart alone the problem could be dealt with in its proper perspective.

The second type of cardiac patient found below the 40 year mark is the one in which damage to the

heart is already present as the result of a previous rheumatic infection. I believe the prevalence of this condition will diminish in the future because of the early and more complete removal of tonsillar and adenoid tissue, but we of the present must keep it in mind. Acute rheumatic infections always damage the mitral valve and when followed with toxicity from the thyroid, the signs and symptoms are essentially those of an apical murmur with progressing edema and decompensation. The diagnosis of previous rheumatic disease is made, of course, from the history. The presence of a mitral murmur with an accelerated pulse does not differentiate the presence or absence of valvular disease, but the progression to edema, ascites and decompensation precludes without doubt the association of a secondarily damaged heart. The decompensation in the beginning is on the right side and dyspnea on exertion, cough, expectoration, occasionally a slight elevation of temperature and episodes of asthmatic attacks will usually incapacitate the patient. Edema of the lower extremities and enlargement of the liver will appear only in the end stages. Frequently the pulmonary symptoms will be far more severe than the evidence of cardiac damage warrants. Bed rest with the administration of cardiac drugs will produce benefits in the beginning but relapses will occur with increasing frequency and intensity. Minimal exertion will always send these patients to bed with a return of all their symptoms. Auricular fibrillation may be a complication but it is more commonly found after the age of 40.

After 40 years of age hyperthyroidism of this type produces the clinical picture of organic heart disease. Circulatory diseases occurring at this age fall into well defined groups as hypertension, angina, congestive failure; and the addition of hyperthyroidism does not alter the clinical pattern. Angina pectoris, which produces invalidism because of the severe pain on overexertion or overeating, is associated with coronary sclerosis. Between attacks there is always a fear or sense of impending doom which is in itself incapacitating to the patient. When associated with toxicity from an adenoma of the thyroid the anginal pains lose their relation to exertion and overeating and strike while the patient is at rest, or in the middle of the night. The persistence and increase in intensity and duration of the pain in the face of treatment by accepted methods of cardiac therapy, and in the presence of only moderate cardiac changes as shown by the clinical findings and the electrocardiograph tracings, must lead one to suspect a thyroid condition. The pulse rate is usually accelerated and it is not lowered perceptibly by rest in bed and sedation. Cardiac decompensation, when it occurs, is so typically cardiac that the presence of hyperthyroidism is not suspected.

Hypertensive cardiovascular disease occurring in middle life is so frequently associated with the overly large individual that the presence of hyper-



thyroidism is least anticipated. A moderate non-symptomatic elevation of the blood pressure will unfold into a devastating disease in the presence of an unsuspected and innocent small adenoma of the thyroid. In the face of well advanced arterial changes, the characteristics of the pressure will not be unusual with the exception that the blood pressure levels are elevated higher than the vessel changes would seem to indicate. Hypertension with little change in the character of the vessels will assume certain phases dependent on the presence of hyperthyroidism. The diastolic pressure will fall in response to the increased peripheral dilatation, the pulse rate increase and the systolic level rise resulting in an increase in the pulse pressure. Paroxysmal fibrillation or anginal episodes may complicate the disease. Congestive heart failure is the terminal clinical picture, while the thyroid factors will be completely masked as the disease progresses. These people are most certainly doomed as a moderate hypertension with a fairly efficient cardiovascular mechanism compatible with a decade or so of restricted living will come to an early end when the stimulus of a toxic adenoma is superimposed.

Cardiac irregularities are so frequently associated with arteriosclerotic changes in the heart itself that the presence of a thyrotoxicosis is easily overlooked. The changes in the heart and vessels are easily demonstrated and the symptoms are frankly referable to these changes; but under the whip of an overactive thyroid gland the symptoms

are markedly aggravated and the patient becomes a complete invalid. The presence of long standing hyperthyroidism will induce changes in the muscle and produce irregularities in the beat of the heart. Auricular fibrillation is the most common type of irregularity, but auricular flutter and heart block may be present in a heart previously damaged by lues, hypertension or arteriosclerosis. Murmurs are usually present and decompensation will inevitably follow as the heart is certain to run away with itself under the impulse of its own increased metabolism. The least suspected individual presents fibrillation as his only complaint without the presence of the usual body changes incident to hyperthyroidism. Auricular flutter, of course, is more damaging to the efficiency of an individual and will produce changes more in the nature of a circulatory deficiency.

Congestive heart failure is a far advanced stage of one or more of the above group of cardiac malfunctions. This type of case will be seen more frequently and with many types of complications and it will be the most difficult to unravel. The presence of hyperthyroidism will be well masked in these people and it will be necessary to become thyroid minded to suspect the background. These people have two diseases, cardiac and thyroid, one overshadowing the other, and with the elimination of the thyroid element cardiac compensation will follow and the patient become ambulatory. Always significant in these cases is the poor response to the usual cardiac medication and the repeated relapses with increasing frequency and the fact that the visible cardiovascular changes are not sufficient to produce the symptomatic findings. Some of the cases are the so-called "burnt-out thyroid" in which all the appearances of myxedema may be present but there remains sufficient activity in the gland to maintain an accelerated heart pace.

#### PATHOLOGY AND PHYSIOLOGY

The gross clinical findings in the thyroid gland may be positive or negative. Positive findings are an enlargement of one or more lobes or the presence of a palpable adenoma. Not infrequently the enlargement will occur downward beneath the sternum and without roentgen ray examination its presence cannot be determined. Less common is an enlargement posteriorly and between the trachea and esophagus. This type of enlargement is found only at operation. Occasionally these enlargements have been left following a previous thyroidectomy and the symptoms have continued unabated. A certain firmness will develop in the gland or it may become somewhat smaller and a microscopic section will reveal marked activity. The presence of a hidden adenoma in the gland cannot always be detected and, following removal of the gland and gross serial sectioning in the laboratory, the gland substance will contain one or more fair sized adenomata. The presence of an enlargement or an adenoma is good evidence of pathological change in

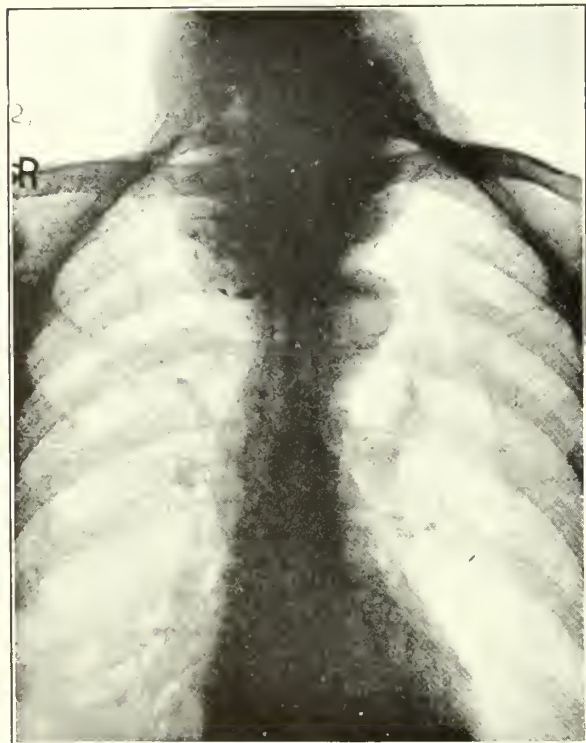


Fig. 1. Roentgenogram of chest showing intrathoracic extension of an otherwise "normal" thyroid gland.

the thyroid. Their absence indicates that a further search must be made with the roentgen ray and even then it may require surgical exploration of the gland to discover small adenomata or enlargements that cannot be palpated.

The microscopic findings are essentially those of increased glandular activity manifested by an increase in the number of acini and by signs of increased cellular metabolism with or without an increase in the quantity of glandular secretion. These characteristic findings are present in the form of an adenoma or two, or they may be diffuse through the parenchyma. The cells lining the acini of the gland become tall and columnar in outline; they are filled with secretion and the nuclei become hyperpigmented and may show active mitosis. The number of acini or gland constituents increases as evidenced by buds growing from the already hyperactive acini and the stroma is the site of the usual circulatory changes in response to the increased physiological demand. Clinical experience has shown that the most toxic adenoma may occasionally be single and quite small.

The basal metabolic rate estimation in this type of hyperthyroidism is of questionable value and a single reading is often misleading and valueless. Few of these individuals will have high basal readings. There is a normal physiological lowering of the general body metabolism with increasing age. If readings between minus ten and plus ten are taken to be normal, and if an elevation of the basal of plus twenty occurs in an individual with an already existing rate of minus ten, the reading will show a basal rate of plus ten, which is certainly not normal for that particular person. Repeated basal readings of plus ten and plus twenty are of great value in diagnosis, but readings within the normal limits are of little value. All readings should be taken with the patient in the hospital to insure similar conditions and circumstances for each estimation.

The pathological changes in the circulation are necessarily governed by preexisting conditions upon which the hyperthyroidism acts. In persons under 40, without previous damage to the heart from rheumatic infection, there is no change. Lahey and Hurxthal,<sup>1</sup> studying their series of three hundred cases, concluded that there is no change in the heart and no congestive failure. Weller,<sup>2</sup> Wilson,<sup>3</sup> Fahr,<sup>4</sup> Ceelen,<sup>5</sup> Rake and McEachern,<sup>6</sup> Lev and Hamburger,<sup>7</sup> Yater<sup>8</sup> and Lermen and Means<sup>9</sup> do not believe that thyrotoxicosis in itself will cause organic heart changes. Burnett and Durbin,<sup>10</sup> Read<sup>11</sup> and Kepler and Barnes<sup>12</sup> believe that it does.

The effect of the thyrotoxicosis on the circulation is a marked increase in the pulse rate in response to the increase in the general body demands and to the increase in the metabolism of the heart muscle itself. There are also undoubtedly some changes in the activity of the individual heart muscle cells. Andrus and McEachern<sup>13</sup> found that isolated hearts

perfused with thyroxin beat with an accelerated rate as long as the perfusion was continued. Yater<sup>14</sup> found that isolated portions of chick embryo heart muscle, removed before the development of nerves, followed the same rule. The development or presence of the auricular fibrillation is not as easily explained, but it is found that age and the length of the toxicosis have considerable influence. Magee and Smith,<sup>15</sup> in 800 cases, learned that fibrillation occurred equally in adenomatous and exophthalmic changes but was infrequent before 40 and common after 50. Plummer<sup>16</sup> believes that the longer the thyroid toxicity, the greater the incidence of fibrillation. In cases of angina, Crile<sup>17</sup> has found that hyperthyroidism has the same effect on the symptoms as effort. The effect of the thyroid on the blood pressure is an increase in the pulse pressure as the result of an elevation in the systolic level in response to the accelerated pulse rate, and a lowering of the diastolic level incident to the increased vasodilation in response to the change in metabolism. Occasionally in response to an increased metabolism and a voracious appetite, a high carbohydrate diet will be indulged in by the patient which may result in an inversion of the serum-globulin ratio in the blood with the production of an edema close to that of myxedema in clinical appearance. Heart muscle has two physiological properties, contractility and conduction of nerve impulses; any disturbance in the production and balance of thyroxin in the body will immediately affect the conduction of nerve impulses and the increased metabolism of the myocardium will change its contractility.

#### DIAGNOSIS

The diagnosis of heart disease with hyperthyroidism presents a number of problems and must be based on clinical as well as laboratory tests. The general appearance of the individual with a suggestive stare, intolerance to heat, excessive perspiration, flushing of the skin about the face and neck and a history of always feeling tired out suggest a possible thyroid background. The presence of ede-

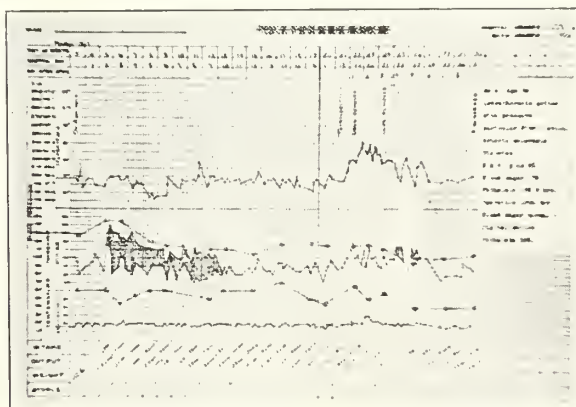


Fig. 2. Auricular fibrillation before and after thyroidec-  
tomy. The shaded portions of the chest indicate the duration  
and degree of the fibrillation.



ma, ascites and other evidences of congestive failure will usually mask these findings. A myxedematous appearance does not rule out the possibility of a small toxic adenoma being directly responsible for an increase in the cardiac symptoms. Repeated slight elevations of the metabolism as determined by the basal readings is direct evidence of thyroid derangement. Negative basal readings do not rule out the possibility of a thyroid factor. The presence of auricular fibrillation should always indicate the thyroid gland and a persistent elevation of the pulse rate not amenable to rest and digitalis is evidence in favor. Hypertension with an increase in the pulse pressure is the response of the circulation to thyroid stimulation. The examination of the thyroid gland may reveal the presence of an adenoma, or an enlargement of one lobe, or the presence of a small firm gland; and these should be considered as good clinical evidence. It must be remembered that an adenoma may be hidden in the substance of the gland, or the enlargement may be substernal or retropharyngeal. A therapeutic test with Lugol's solution may be the determining factor in an otherwise difficult diagnosis, but one must not forget that the use of Lugol's solution is reserved for preoperative medication and, in these cases especially, it must not be used over a long period of time. Angina that strikes the patient at rest or that persists in spite of rest may have thyroid stimulation behind it. Where the symptoms are not warranted by the pathological changes found, as based on clinical findings and

tests, an overactive thyroid is most likely the inciting cause and, likewise, the cases of cardiac disease that do not improve clinically on the best accepted regime must be studied on the basis of a possible latent hyperthyroidism.

#### TREATMENT

The treatment of the hyperthyroid heart is thyroidectomy. The amount of gland to be removed is determined on the previous clinical experience of the surgeon. The removal of a single adenoma from the thyroid of these individuals is a mistake. The operation must include some exploration to eliminate the possibility of any extension behind the trachea or below the sternum. It is important to remove a portion of each lobe of the gland as small adenomata may remain hidden in their substance. The mortality in this type of thyroid surgery is no higher than in any thyroid surgery. The additional risk imposed by the presence of cardiac disease is combated nicely with the use of graded operation starting at simple ligation, or a lobectomy to complete removal. Six months may be allowed to pass between the removal of both lobes. The use of the oxygen tent, transfusions and digitalis all play a definite part in keeping the mortality rate low. The administration of Lugol's solution is as much a part of the operation as the anesthetic and should not be begun before the surgeon has been consulted. The use of newer anesthetics has likewise helped to maintain a high standard of surgical intervention so that with the proper use of all these adjuvants the presence of acute congestive failure may delay the operation but in no way does it prohibit surgical removal.

#### SUMMARY

Many people reach the decades of life past 40 with organic cardiac damage of varying degree but without marked interference with their daily activities. When the thyroid gland becomes toxic under these conditions the symptoms, both subjective and objective, are directly cardiac while there is little in the disease to suggest the presence of hyperthyroidism. The cardiovascular manifestations become aggravated and progress until the individual is completely decompensated in the face of the best cardiac therapy. The clinical examination of the thyroid gland may reveal little to lead one to suspect it; occasionally a small adenoma may be present. It must not be forgotten that some of the most toxic adenomata are quite small and may be hidden in the substance of the gland, while substernal or retropharyngeal enlargements cannot be felt at the usual examination. The usual and more common symptoms of hyperthyroidism are not present and the basal metabolism estimation may be only slightly elevated above the normal. Characteristic of all these cases is the presence of cardiac symptoms out of all proportion to the cardiovascular changes and the marked resistance to the usual cardiac therapy with considerable benefit

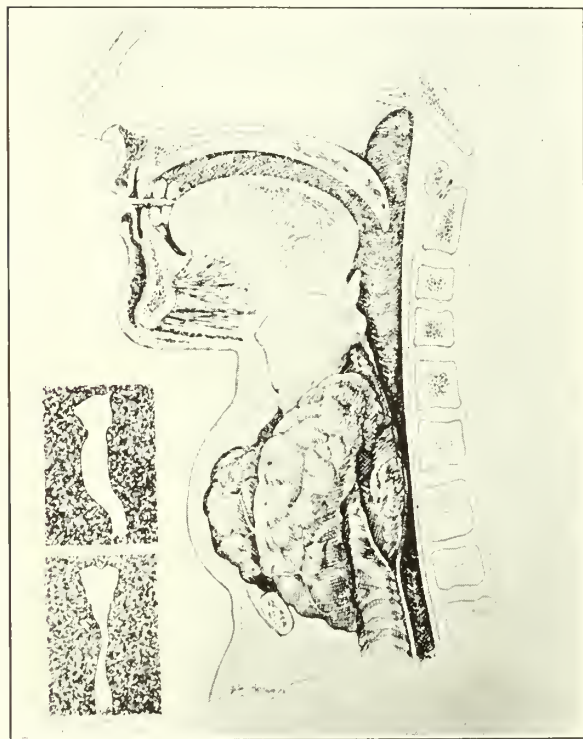


Fig. 3. A schematic drawing illustrating the thyroid gland between the trachea and esophagus.

on the administration of Lugol's solution. Removal of the offending gland will make these people ambulatory.

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## GALL STONE ILEUS

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ST. LOUIS

Martin<sup>1</sup> and many others give Bartholin credit for reporting the first case of gall stone ileus in 1654. However it was not until 1890, 236 years later that an extensive report of the condition was written by Courvoisier<sup>2</sup> who reported 131 such cases with 70 spontaneous cures by passage of the stone per rectum.

It is admittedly a rare condition. Many surgeons with extensive practices see only one or two cases in a lifetime. In 1912 Martin<sup>1</sup> sent a questionnaire to twenty-eight prominent surgeons in this country who reported only sixteen cases in approximately 540,000 operations of all kinds. Of these sixteen cases eleven died.

In 1928 Powers<sup>3</sup> reviewed the cases at Peter Bent Brigham Hospital and found only four cases of gall stone ileus in 179 cases of obstruction from all causes. Moore<sup>4</sup> estimates that 1.2 per cent of all cases of intestinal obstruction is due to this condition. Prior to 1918 only two cases had been reported from the Massachusetts General Hospital. Abbott and Hunt<sup>5</sup> reported twenty-three cases in the eight years immediately prior to 1922 but in the discussion on the paper eight other cases were reported by surgeons in the audience.

In attempting to review the American and Eng-

lish literature from 1924 to 1934 I found fifty-eight cases reported, which I feel indicates an increase in the reporting of unusual cases rather than an actual increase in the incidence of the condition. Prior to 1924 I found forty-four cases reported which does not cover the available literature but does serve as a statistical comparison between the two periods.

Gall stone ileus occurs more frequently in females than in males in a ratio of about three to one. This is borne out in the series investigated and was also mentioned in the report by Courvoisier<sup>2</sup> in 1890. I think this is explainable by the fact that gallbladder disease is much more frequent in the female than in the male.

Table 1. Sex Distribution

	Male	Female	Not reported
Prior to 1924	5	34	5
1924 to 1934 inclusive	11	34	13

The greatest incidence is in the fifth and sixth decades but cases are reported in persons from the ages of 31 to 90 years.

Table 2. Age Incidence

	30-39 M F	40-49 M F	50-59 M F	60-69 M F	70-79 M F	80 or over M F	Not stated
Before 1924	1 1	2	5	3 16	1 7	2	16
1924 to 1934 in- clu- sive		2 2	1 10	2 15	2 5	3 2	14

There are three paths of entrance of the stone into the gastro-intestinal tract; the most common (1) is through a biliary duodenal fistula, although biliary fistulas do occur into the ileum and the large bowel; (2) stones also may enter through a fistula of the choledochus into the duodenum, (3) the stones may enter the duodenum through the intact common duct. This is hard to understand but Martin<sup>1</sup> cites a case reported by Morgagni in which the common duct was dilated to the size of the stomach by gall stones. In such occurrences the pain is most severe and jaundice most apt to occur. Davis<sup>6</sup> and Schonfield<sup>7</sup> each report a case in which stones were found in the gallbladder following gall stone ileus without evidence of biliary fistula.

#### DIAGNOSIS

Early diagnosis is the key to reduction of mortality and is the most difficult problem of the condition. In 25 per cent of the cases reviewed there was an absolutely negative history of previous gallbladder disease, and in another 25 per cent the history was vague. The pain associated with the condition is not typical of ordinary obstruction and is usually less severe. The stone may act as a ball valve causing intermittent symptoms of obstruction. Again the stone may change position and result in various sites of the pain as illustrated in the case to be reported. Strangely enough scapular



pain is not typical, occurring more often when the stone is passed without fistula formation.

Table 3. *History of Previous Symptoms*

	Definite	Vague	Not stated	Negative
Before 1924	17	9	8	10
1924 to 1934 inclusive	17	9	19	12

Jaundice is a rare accompaniment of this condition, occurring most frequently when the stone passes through the intact common duct. It is readily seen why there is no biliary obstruction when the stone passes through a biliary duodenal fistula.

In only a few cases is a mass palpated; in approximately only 5 per cent of the cases reported. Elsner<sup>8</sup> reports an interesting case in which a mass was palpated in the right upper quadrant for fifteen months only to disappear and another mass occur in the right lower quadrant subsequently. Finally after a few days a large gall stone was passed per rectum. Eleven months later this patient passed a second stone per rectum following a period of intermittent obstructive symptoms.

Roentgenology is a most valuable present day aid in diagnosis when the stone is of calcium constituency. McWhorter<sup>9</sup> reports a case in which a stone was visualized in the right upper quadrant only to be seen eight days later in the ileum.

Mechanical factors account for the most common site of obstruction. The lower third of the ileum gradually narrows to the ileocecal valve and it is in this area where one finds the gall stone causing obstruction. In the fifty-eight cases reviewed between 1924 and 1934, fifty-three gave the site of obstruction. Forty per cent occurred in the distal third of the ileum near the ileocecal valve, 8 per cent in the duodenum and 5 per cent in the jejunum. Only two cases were reported with obstruction in the large bowel. Eight per cent passed the stone per rectum. Courvoisier<sup>2</sup> reported in 1890 5 per cent occurrence in the duodeno-jejunal region and 63 per cent in the ileum. It is interesting to note that in the era prior to frequent operation a seemingly larger proportion passed the stones per rectum, always resulting in recovery.

Table 4. *Site of Obstruction*

	Before 1924	1924 1934 inclusive
Stomach	0	1
Duodenum	5	3
Jejunum	3	9
Upper ileum	1	2
Middle ileum	3	5
Ileum	4	6
Ileocecal	18	22
Colon	0	2
Rectum	4	1
Not stated	4	6

Each stone should be carefully examined for facets and if any are found further search should be made for in this lies one of the pitfalls of surgeons. All too frequently a second stone is lurking higher in the gastro-intestinal tract awaiting its arrival at the vulnerable spot to cause obstruction.

It is felt that when a faceted stone is obtained there is most likely another stone higher in the gastro-intestinal tract which should be removed before closure. Wakely<sup>10</sup> reports a case in which one stone was passed per rectum with relief of symptoms only to have the symptoms recur shortly and a stone was found at the lower end of the ileum. Both Pybus<sup>11</sup> and Moschowitz<sup>12</sup> report cases in which second operations had to be done to relieve second obstructions due to stones not found at the first operation.

The mortality is about 50 per cent when one averages the reports of the various series. Naunyn<sup>13</sup> reports a mortality of 92 per cent in a series of thirteen cases while Benning-Wilms<sup>14</sup> reports a mortality of 33 per cent in a series of sixty-four cases. In 1890 a report by Courvoisier<sup>2</sup> gives a mortality of 44 per cent in a series of 135 cases, while in the fifty-one of the fifty-eight cases reviewed between 1924 and 1934 in which the mortality was reported it was 53 per cent. In the series of cases reviewed from 1881 to 1924 the mortality was 42 per cent. While each series is too small to justify any sweeping statements concerning mortality it certainly can be said there is no startling improvement with our modern methods of treatment.

Table 5. *Mortality*

	Recovered	Dead	Not stated
Before 1923	22	15	7
1924 to 1934 inclusive	24	27	7

Interesting phenomena from a roentgenographic standpoint should be mentioned. Sichels and Hudson<sup>15</sup> report a case in which the gallbladder would fill after a barium meal when the patient was in the prone position. Paul<sup>16</sup> visualized a Y shaped collection of gas in the right upper quadrant which he interpreted as gas in the common and hepatic ducts. Fuller<sup>17</sup> found a case in which there was a colonic biliary fistula, the barium going into the gallbladder from the colon and outlining the ducts.

The wanderings of gall stones should be noted. There are seven cases reported by Courvoisier<sup>2</sup> in which there was a biliary renal fistula, the stone being passed per urethra. Elsner<sup>8</sup> reports similar cases, both of his own and Pelletin and Baroud. Several instances were reported in which gall stones have been vomited or found in the stomach at postmortem.

#### REPORT OF A CASE

D. F., an obese white female, aged 65, was first seen July 21, 1935, suffering with acute epigastric distress. She was a known diabetic, hypertensive, and gave a history of previous gallbladder attacks. No fever; pulse 56 per minute. Pain did not radiate to scapular region and was not typical of previous gallbladder attacks. Morphine and atropine gave relief of pain and the pulse returned to 72 per minute. White blood cells 7100 and urine showed a three plus sugar with no acetone. No pain for the next three days but elimination was poor even with enemata; there was some vomiting but no unusual distension. On the afternoon of the third day there was severe pain in right lower

quadrant without increase in white count or presence of sugar in the urine. Hospitalized on the fourth day. Good results from enema on entrance and patient comfortable with parenteral fluids. On night of fourth day distension rapidly occurred and fecal vomiting set in. Operation early next morning revealed stone about 3½ by 1½ inches in size in the duodenum. Roentgen ray prior to operation revealed signs of obstruction but no stone. Postoperative course stormy and patient died 48 hours later.

Postmortem through old operative scar revealed operative opening into the duodenum through which stone had been removed and a biliary duodenal fistula.

#### CONCLUSIONS

1. Gall stone ileus occurs most frequently in the seventh decade and is more prevalent in the female than the male.
2. The mortality has not improved through the years with advanced methods of treatment.
3. Early diagnosis is the essential factor in the treatment of the condition.
4. When a faceted stone is found at operation other stones should be sought for higher in the intestinal tract.

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H. C. Bazett, Philadelphia (*Journal A. M. A.*, Nov. 12, 1938), finds that preliminary studies on the effect of heat on the volume and circulation of the blood seem to indicate that air-conditioned rooms should be added to the equipment of physical therapy departments. In such an analysis of the effects of heat it is necessary to distinguish the parts played by (1) local dilatation in the cutaneous vessels with its accompanying local increases in the rate of flow, capillary pressure and fluid transudation; (2) compensatory reduction of the vascular bed in areas other than the skin, which allows dilatation in the cutaneous vessels even when the blood volume is unchanged or reduced; (3) increases in blood volume on exposure to heat which form an alternative method of compensation in lieu of vasoconstriction, and (4) alterations in cardiac output.

## PULMONARY TUBERCULOSIS

### EARLY DIAGNOSIS: A PERENNIAL PROBLEM

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AND

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During the last two decades the facilities for diagnosing and treating pulmonary tuberculosis have been considerably improved and enlarged. At the same time a widespread and intensive campaign has been in effect in an endeavor to secure cooperation from the laity in curtailing this disease. In many respects gratifying results have been obtained but in one of the most important issues, early diagnosis, the results have been most disappointing. While exact figures cannot be obtained, it is an undisputed fact that the majority of patients have advanced disease before they are diagnosed. About 75 per cent of the cases of pulmonary tuberculosis admitted to Robert Koch Hospital are far advanced, about 20 per cent are moderately advanced and approximately 5 per cent arrive with their disease in an early stage. Unquestionably our long waiting list plays its part, but we feel the main reason for this deplorable situation is that most patients are far advanced before it is discovered that they have pulmonary tuberculosis. It is interesting, though discouraging, to note that these percentages have remained practically the same during the last fifteen years. However, we are not unique in this respect as most large state and municipal tuberculosis hospitals report essentially the same situation.

We recently reviewed all cases of pulmonary tuberculosis in the hospital to see what information we could glean as to why this most unfortunate state of affairs exists. In carrying out this study we excluded a few cases in which the diagnosis of pulmonary tuberculosis had been made in the absence of any subjective symptoms. Also we omitted those patients who, for various reasons, could not give coherent or reliable information. Throughout we depended on direct personal questioning rather than on their previously obtained histories. A number of patients could not answer certain portions of our questionnaire and they were omitted from consideration on that particular point, percentages being figured on the number from whom we secured information. Four hundred forty-seven patients were interviewed; 161 white and 70 Negro males; 163 white and 53 Negro females. For the sake of brevity it is to be understood that throughout this study a breakdown of our figures on the basis of sex and race showed nothing significant unless specifically stated otherwise.

From Robert Koch Hospital, Hospital Division, Department of Public Welfare, St. Louis.

Abstracted from a paper read at a meeting of the St. Louis Trudeau Club, May 5, 1938.



The following items were considered: (1) stage of pulmonary disease on admission to the hospital, (2) the duration of symptoms prior to consulting a physician, (3) the time elapsing between the patient's consulting a doctor and the date when a diagnosis of tuberculosis was first made, (4) the incidence of hemoptysis and chest pain prior to consulting a physician, (5) the incidence of sputum at the time a physician was first consulted, (6) the classification of the first doctor consulted, (7) the classification of the physician finally making the correct diagnosis of pulmonary tuberculosis, (8) the results obtained from the first physician consulted, (9) errors made by the first physician consulted, and (10) the patient's cooperation in regard to treatment.

The possibilities of error in a study of this kind are considerable since so much of it depended on a patient's memory of situations and events which in many cases happened long ago, and furthermore, some of the points on which we sought information defy exact analysis. While we do not wish to have our results taken too literally, we do feel they show the main situations to a fairly accurate degree.

#### STAGE OF PULMONARY DISEASE ON ADMISSION TO THE HOSPITAL

Of the 447 patients considered in this study, 77 per cent were admitted as far advanced, 20 per cent as moderately advanced and 3 per cent as minimal. This represents approximately the same ratio we have had for the last fifteen years.

#### DURATION OF SYMPTOMS PRIOR TO CONSULTING A PHYSICIAN

This averaged 8.8 months for all patients. Negroes consulted a doctor more promptly than did whites, 5.8 as against 9.9 months. Females were sick, on the average, a shorter time before seeking advice than were males. This is well illustrated by the fact that approximately 80 per cent of the women consulted a physician within three months of the onset of symptoms, whereas, only 42 per cent of the males reported within this same period of time.

#### INTERVAL BETWEEN THE PATIENT'S FIRST VISIT TO A PHYSICIAN AND TIME WHEN TUBERCULOSIS WAS FIRST DIAGNOSED

This period of time averaged 6.6 months for all patients. Again the interval was shorter for Negroes, 2.5 months for them as against 8 months for whites. We have already pointed out that our patients averaged 8.8 months duration of symptoms before going to any doctor, and since they averaged another 6.6 months before someone finally made the diagnosis it is evident that they had been ill over fifteen months, as an average, before tuberculosis was diagnosed. Small wonder then that most admissions to tuberculosis hospitals are in the advanced stages.

#### HEMOPTYSIS AND CHEST PAIN

These phenomena are so frequently due to tuberculosis that it should be considered their cause until proved otherwise. For this reason we made special inquiry concerning them. Twenty-three per cent of all patients gave a history of streaked sputum or frank hemoptysis prior to their first visit to a physician. For white males this figure rose to 30 per cent. Pleurisy is difficult to separate definitely from other forms of chest pain by history alone so we felt it best to inquire about chest pain with the result that in 44 per cent of our cases we obtained the history of this having been present prior to their first consulting a doctor. The Negro female with an incidence of 28 per cent fell way under average in this respect.

#### SPUTUM

According to their histories, 71 per cent of all patients were raising sputum at the time they first visited a doctor. The figure was higher for males, averaging 82 per cent.

#### CLASSIFICATION OF THE FIRST PHYSICIAN CONSULTED

The private practitioner was the first physician consulted by 57 per cent of our patients and 41 per cent were first seen in a clinic. The remainder went to insurance or industrial physicians. This is food for thought. Since most of our patients at Robert Koch Hospital come from the lower economic strata, it is evident that even among the financially underprivileged, in these days of economic stress, the private physician is still the people's choice. The fact that this private physician was usually doing general work emphasizes the assertion of Osler that the leadership in the battle against tuberculosis belongs to the general practitioner.<sup>1</sup>

#### CLASSIFICATION OF THE PHYSICIAN RESPONSIBLE FOR MAKING THE DIAGNOSIS OF TUBERCULOSIS

Credit for the correct diagnosis, when it was eventually made, was almost evenly divided between private physicians (50 per cent) and clinics (48 per cent). In far too many instances the patient presented his signs and symptoms to several doctors before a correct diagnosis was finally made. For our 447 cases the average was 1.7 doctors consulted before a correct diagnosis was made; the average for Negroes was slightly less than for whites.

#### RESULTS PATIENTS OBTAINED FROM THE FIRST DOCTOR CONSULTED

These leave much to be desired. The vast majority of patients had symptoms which, if not fairly shrieking for a diagnosis of tuberculosis, at least made its exclusion imperative; yet in only 55 per cent of them did their first doctor promptly make the correct diagnosis and institute proper treatment, or receive credit by referring them to someone who did. In an additional 9 per cent the first

physician consulted made the correct diagnosis but the treatment, in our opinion, was woefully poor. This group of patients was advised to quit work, take sun baths, go out West to live, do out of door work, and so forth with no particular emphasis on the all important principle of rest. In 35 per cent of our patients the first physician failed to diagnose tuberculosis or did so only after an apparently inexcusable delay. A few (about 2 per cent) of our patients apparently were diagnosed correctly and were well advised in regard to treatment but were not told that they had tuberculosis. In our opinion this is the most inexcusable error one can make in this line of work.

#### ERRORS IN DIAGNOSIS MADE BY THE FIRST PHYSICIAN CONSULTED

Of our 447 patients, 156 (35 per cent) were incorrectly diagnosed by the first doctor they consulted. As one would expect, when he was a clinic physician with roentgen ray and laboratory facilities at his disposal, errors were much more seldom than when he was a physician in private practice. Eighty-three per cent of the errors made by the first doctor consulted were charged up to physicians in private practice and only 14 per cent to clinic physicians. Industrial physicians accounted for the remaining 3 per cent of errors. When one scrutinizes these missed diagnoses from the standpoint of the type of examination made by the first physician consulted, it is obvious the errors were due to omissions. Physical examination, roentgenogram of the chest and sputum examination are minimal essentials on the individual suspected of pulmonary tuberculosis, yet out of 156 errors these three procedures were said to be done in combination only five times. Forty-three of the 156 patients (over 25 per cent) stated none of these procedures were done by their first doctor. Of these 156 patients 154 were raising sputum, yet in only sixteen was it examined if the history we obtained is correct. It is manifestly unfair to pass judgment when one lacks information concerning all pertinent circumstances, and we have no doubt that many times the unsatisfactory results our patients obtained from their first physician were due to their own carelessness or lack of cooperation. However, one cannot escape the conclusion that diagnoses of "flu" or "bronchial trouble" are too lightly given to a patient along with some cough medicine and that frequently this procedure replaces an adequate examination.

#### PATIENTS' COOPERATION IN REGARD TO TREATMENT

The patients' cooperation after being told that they had tuberculosis appears good. Only 9 per cent of them admitted that they had not followed medical advice. The figure was somewhat higher (15 per cent) for Negroes. Experience makes us feel that lack of cooperation is more frequent than this. We suspect that in telling their stories our patients gave themselves the best of it in this respect.

#### DISCUSSION AND CONCLUSION

We are fully aware that the information we have secured in this study may not apply in other places or to other types of people, particularly those in the upper economic brackets. Nevertheless, it must be remembered that it is the portion of our population from which Robert Koch Hospital draws its patients that furnishes our biggest problems in tuberculosis control.

Finely drawn conclusions from work of this type are decidedly hazardous, but several things seem to stand out:

1. Patients with pulmonary tuberculosis neglect their symptoms for a long time before seeking medical advice.
2. Far too often the diagnosis is not made when the patient finally does consult a physician.
3. The vast majority of errors in diagnosis could be avoided by adhering to the minimal essentials when dealing with any pulmonary disease; viz., history and physical examination, roentgen ray and sputum examinations.
4. An alert general practitioner is the public's best defense against pulmonary tuberculosis.

Robert Koch Hospital.

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## CANCER THERAPY

#### PRESENT POSSIBILITIES AND FUTURE EXPECTATIONS

FRED. J. TAUSSIG, M.D.

ST. LOUIS

As an introduction to the program dealing with cancer research and radiation treatment of cancer, I have been asked to present a brief discussion of the cancer problem as it faces the medical profession today; what we are actually doing, what we should be doing at the present time and what reasonable hopes of gain lie in the not too distant future.

When we look back on the accomplishments of medical science in the last hundred years we have reason to be proud of our success. Some diseases have been annihilated, others reduced to an insignificant mortality. The average duration of life has been materially lengthened but that Titan, cancer, the product of increasing years, looms up more than ever as a danger to the race. That there is an actual as well as a relative increase in the death rate from cancer seems without reasonable doubt. We are still a long way from having discovered its cause. But the very difficulties that face us should spur us on to redoubled efforts to conquer the malady. Let those who are by nature pessimists take other paths. To carry this work to

Read before the St. Louis Medical Society, April 12, 1938. Gynecologist, Barnard Free Skin and Cancer Hospital, St. Louis.



success takes an abiding faith in the achievements of medical science. In cancer treatment it is important to be guided by a spirit of optimism. With our limited methods of early diagnosis and effective treatment we are bound to have a high percentage of failures in cancer therapy. For that reason we must be guided by a hopeful spirit. There is unfortunately a tendency on the part of many practitioners to consider almost every case hopeless as soon as the diagnosis of cancer has been made. Even though the final results may be only relief of suffering and prolongation of life, it is better to give the patient the benefit of the doubt and proceed with the appropriate surgical or radiation treatment. Every now and then we are amazed at cures in almost hopeless cases resulting from such a policy of courageous optimism.

In trying to estimate what we are at present accomplishing in the cure of cancer we must remember first of all that we ordinarily define cure as a five year freedom from recurrence although in perhaps an additional 10 per cent of cases death from cancer may occur in succeeding years. Secondly, we cannot figure the percentage of cures merely from the statistics of large cancer institutions with their staffs of highly trained specialists. The average incidence of cure throughout the country is much lower than that. If we figure the annual death rate from cancer in the United States as 133,000 and the number of cases diagnosed as cancer under treatment as about 400,000, we find marked variations in the number of cures in cancer at different sites. Skin cancer should run in the neighborhood of 90 per cent cures, whereas in cancer of the stomach the salvage is not over from 3 to 5 per cent. In cancer of the cervix of the uterus the rate of cure is probably not over 12 per cent whereas in breast cancer it should be nearly 25 per cent. Unfortunately our statistics at present deal primarily with cancer mortality and the results of cancer treatment in a relatively small number of hospitals in our large cities. Accurate figures of cancer cures are not available but if we exclude the relatively numerous small easily curable skin cancers, the total number saved annually by surgery and radiation probably does not exceed 20,000 cases.

This however by no means represents our present possibilities. Even if we fail to add one new method of early diagnosis or more effective treatment through research in the next ten years, we could by a fuller utilization of our present knowledge add materially to the number of lives that are being saved. This improvement can be accomplished primarily along three lines; namely, (1) obtaining the cooperation of the patient, (2) correct and early diagnosis by the physician, and (3) prompt application of the appropriate treatment. When any one of these three cogs in the machine fails to coordinate the chance for a cure is cut in half.

*Cooperation of the Patient.*—This implies not only that the patient has learned to know the danger signals of cancer through public talks, pamphlets

or journals, but that the patient also has the moral courage when in doubt to go to a physician for a thorough examination. Finally and most important in this question of cooperation the patient must have the determination to carry out promptly the treatment advised. The splendid work of the American Society for the Control of Cancer, started twenty-five years ago and in which we in St. Louis have had an active part, has done much to overcome the inhibitions and ignorance that kept people from recognizing cancer at an early curable stage. There is still much to be done in this field of education, especially in the less accessible country districts. Bit by bit we have seen a larger proportion of early cases of cancer; but of course no amount of education can prevail against the inherent tendency to procrastinate, the fear of knowing the truth, the unpleasantness of a complete physical examination, and the fear of the knife and radium that are such common failings in the human race. It is too much ever to expect 100 per cent cooperation of the patient but certainly it could be vastly improved and would result in an appreciable gain in the number of cures.

*Correct and Early Diagnosis by the Physician.*—The credit for what has been accomplished in the last two decades in this field goes first of all to the American College of Surgeons. Their emphasis on training physicians to be cancer conscious in their examinations and making biopsies in all suspected cases, their scientific programs and clinics on cancer at annual and district meetings, deserve the highest praise. State cancer committees have also carried on this work in all parts of the country with great success. We realize however that a not inconsiderable portion of the medical profession does not read medical journals or attend meetings or clinics. Too many fail to make a complete physical examination, through ignorance, laziness or in the hurry of practice. We still must overcome the incubus of the hundreds of half trained doctors turned out by the diploma mills a few decades ago. Higher educational requirements, stricter laws regulating practice and time are gradually depleting this group. Hope for marked improvement lies in the splendid young men now being graduated from medical schools. Of equal value are the widespread facilities for instruction now available in postgraduate assemblies and so-called "refresher" courses. This can still be extended and assuredly will bring about a marked improvement in correct and early diagnosis.

*The Prompt Application of Appropriate Treatment.*—This is in many ways more difficult of accomplishment than early diagnosis. Here it is not only a question of medical education but also a question of medical conscience. It is unfortunately true that the "bread and butter" problem which faces the practitioner inclines him often to start some half way measure of treatment so as to hold on to his patient. In our experience at the Barnard Free Skin and Cancer Hospital hardly a day passes

that we do not see a case that has lost the chance for cure because of a curettement, an incomplete operation or improperly applied radiation treatment. Hardly any field of medical practice requires more intensive study or wider experience than cancer therapy. Unfortunately the number of properly trained persons in this field is grossly inadequate. Their number is being increased at present by the increase in cancer institutes and special tumor clinics. Recently the Federal government through the National Cancer Council has decided to provide facilities for training a group of physicians in cancer diagnosis and treatment. These so-called trainees are to serve a long apprenticeship in the cancer hospitals equipped to give suitable training. Without prompt special treatment suitable for the particular case the chance for a cure will be meager.

These three requisites for success go hand in hand. If utilized to the full we can even with our present knowledge and facilities more than double the number of patients that are now being cured of cancer. That would make a possible rate of cure of about 40 per cent of the 133,000 that now die annually from cancer.

Under the head of present possibilities in cancer therapy we must give due weight to the preventive measures that have been suggested in recent years. The role of chronic irritation as a forerunner of cancer in many parts of the body has been proved beyond reasonable doubt and measures have been suggested that should certainly decrease the incidence of cancer. In skin cancer the wearing of gloves by workers who handle dyes, paraffins, radium and other irritating chemicals should be of definite benefit. In cancer of the mouth dental hygiene, the avoidance of excessive use of tobacco and acrid substances such as betel juice, will lessen the trauma and irritation tending to the development of cancer. How far certain forms of diet and the avoidance of extremely hot or cold foods will lessen cancer of the digestive tract is still to be proved but there is reason to believe such measures are not without value. In breast cancer the removal of cysts and benign inflammatory lesions would seem to be justified. Cervical lacerations combined with chronic infection are so common that routine amputation or conization is scarcely warranted. However in a woman more than 35 years of age who presents evidence of an infected cervix that does not yield to local measures excision of the cervix is justifiable. Out of over a hundred cases in which the cervix was amputated because of infection there was not a single case in which cancer subsequently developed. Cancer of the vulva is relatively rare, constituting only 4 per cent of female genital cancers, yet it is so commonly preceded by many months or years of leukoplakic change in the vulvar skin that it is logical to assume that a complete vulvectomy in this stage of leukoplakic change will definitely prevent the development of many cancers in this part of the body.

Other examples of preventive measures could be given but it is sufficiently clear that they are even in the absence of more definite knowledge of the cause of cancer an important agent in lowering the death rate.

Turning now to the subject of future expectations in cancer therapy, we enter the field of speculation. The fulfillment of the hope for some specific cure applicable to all forms of cancer seems a long way off, particularly since the likelihood of a bacterial cause is so remote. Nothing in the intense research investigations of the last twenty years justifies the hope that a specific vaccine or antitoxin to control this disease will be found. Our future expectations center rather around the studies of normal and abnormal growth, the factors that inhibit or stimulate growth and the chemical constitution of those organic substances that have been shown to produce cancer in animals. These carcinogenic agents are related in chemical structure to certain hormones and such hormones have a definite influence on growth phenomena. It would not seem to be a Utopian dream to expect that in the next decade or two we may come upon some biochemical test that will indicate the impending development of cancer. Perhaps at this stage it may still be possible by the injection of certain hormones or enzymes to prevent the development of abnormal growth phenomena. Perhaps simple dietetic and hygienic measures may suffice at this stage to bring about the desired results. Perhaps by the warning of such a test we may be able to discover cancers at the microscopic beginning of the disease when operation or radiation treatment is reasonably certain to produce a cure. Perhaps we may come upon some measures to stimulate the normal tissues so they will encapsulate the cancer cells and cause their destruction by shutting off nutrition.

Nor should we overlook the fact that the two therapeutic measures at present available in cancer therapy, surgery and radiation, have far from reached the full development of their usefulness. Improvements in surgical technic, especially in lung and brain tumors, will doubtless lead to better results in the future. The implements of roentgen ray and radium treatment are being constantly made more effective. Bit by bit we are chiseling away the mountain of difficulties that besets us. Never has the human race shown so determined an effort to conquer a disease as in the case of cancer. Never have governments and philanthropists combined in such a united attack. We do not expect any sudden victory in this struggle against cancer. Because it seems to have some relationship to the normal processes of old age, of senescence, it may be impossible to complete eradication, but we have the right to expect in the not too distant future a marked decrease in the incidence of cancer by preventive measures and at the same time a decided increase in the percentage of cures through better methods of treatment.

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DECEMBER, 1938

## EDITORIALS

### PNEUMONIA: TOPIC OF THE MONTH

The Postgraduate Correlating Committee inaugurates its program with this issue of *THE JOURNAL*. Further plans will be carried out and organization of all activities will be better correlated as the program is in effect. In this issue the Committee has attempted to present practical material on "Pneumonia." It is hoped that this material will be of value to the individual practitioner and also furnish the basis of discussion for meetings of societies during the month. The Postgraduate Committee will furnish speakers to societies which do not wish to confine their programs to contributions by members.

In the January issue "Highway Accidents" will be the topic of the month and it is suggested that societies plan to devote one meeting during the month to discussion of that subject. In February "Syphilis" will be the topic, in March "Maternal and Infant Care" and in April "Cancer." The topics for succeeding months will be announced.

### DIETARY FAT AND ARTERIOSCLEROSIS

It has been just twenty-five years since Anitschow's classic rabbit experiments focused attention upon the role of cholesterol in the pathogenesis of human arteriosclerosis. From time to time we have taken occasion to comment in these columns upon the fallacies developing from efforts to correlate the result of experimental with human arteriosclerosis. The essential difference between the micro-pathology of the experimental and the human lesion has been pointed out. The importance of nondietary factors in the acquisition of the latter has been generally overlooked. Not a single scientific investigation shows a difference in the incidence of and death rate from arteriosclerosis in ethnic groups subsisting upon diets of widely varying fat and cholesterol content. The unquestioned importance to the human economy of dietary fat and cholesterol has been previously emphasized.

Since people live longer today than formerly and since arteriosclerosis is largely a disease of persons past the age of 45 and since there has been no important alteration in the food habits of the American people in the period since Anitschow's observations, it is to be expected that the death rate from arteriosclerosis has increased at an alarming rate if there is a semblance of truth to the allegations referred to above. Examination of the statistics<sup>1</sup> bearing upon this point shows quite the contrary picture. Between 1911 and 1935 the death rate from arterial disease in persons aged between 45 and 74 years declined from 95.5 to 41.3 per 100,000. For chronic nephritis, invariably accompanied by widespread arteriosclerosis, the comparable figures are 433.9 and 231.2. For myocardial diseases, which is by no means necessarily associated with generalized arteriosclerosis, the comparable figures are 171.7 and 366.7.

Despite the fact that there is no evidence of any sort which might warrant the belief that death from arteriosclerosis and its complications is even remotely associated with fat or cholesterol consumption, there has been a regrettable tendency in recent years to restrict the consumption of foodstuffs containing them. Whether a deficiency of dietary fat leads to actual deficiency disease in otherwise healthy persons has not been finally decided. Nevertheless, scattered observations have shown that fatty substances must be considered essential dietary ingredients. Until it has been conclusively proved that no harm can follow their omission it would be wise to include them in the diet else the fundamental contribution of a host of nutritional experiments of the last few decades will be lost. For in the light of present knowledge it must be admitted that the selection of a diet from the widest possible variety of foodstuffs is conducive to the greatest degree of physical and mental efficiency.

Duff<sup>2</sup> has critically reviewed the whole problem of experimental arteriosclerosis as induced in rabbits, animals with no inherent mechanism to utilize cholesterol, and the human disease. He analyzed present knowledge of the pathogenesis of the condition in man, an animal inherently provided with a cholesterol utilizing mechanism, the ability to synthesize cholesterol from noncholesterol precursors and finally, a known need for cholesterol for the elaboration of certain hormones. The following quotations are taken from his extensive presentation:

"The results of cholesterol feeding experiments in rabbits do not constitute a valid reason for believing that an excess of cholesterol in the diet plays any role in the etiology of arteriosclerosis in man. . . . Hypercholesterinemia is not found with any regularity in association with human arteriosclerosis. It seems highly probable that arteriosclerosis

1. Twenty-Five Years of Health Progress, Metropolitan Life Insurance Co., New York, 1937.

2. Duff, G. L.: Experimental Cholesterol Arteriosclerosis and Its Relation to Human Arteriosclerosis, Arch. Path. 19:81, 259, 1935.

in man can and usually does develop without deviation of the cholesterol content of the blood beyond the normal limits of variation. . . . Although hypercholesterinemia, when it occurs, might be expected on theoretical grounds to accelerate the development of arteriosclerotic changes which have already been initiated, there is little evidence at present to indicate the existence of such an effect."

The only possible conclusion that may be drawn from these observations is that proponents of diets of low fat content for the prevention of arteriosclerosis have seized upon superficial rather than fundamental facts. Their reasoning is of the *post hoc ergo propter hoc* variety. There is no convincing evidence that the feeding of cholesterol is responsible for hypercholesterinemia or arteriosclerosis. Indeed, rabbits have been fed 10 per cent of their body weight in the form of pure cholesterol within a period of ninety days. (By contrast, the entire food intake of the average man amounts to only 57 per cent of his body weight in the same period of time.) No trace of arteriosclerosis could be discovered in the animals at autopsy.

We remain ignorant of the clinical significance of hypercholesterinemia. We may be certain that it is not dependent upon cholesterol intake. Because interest is so fastened upon it at the present time it is refreshing, to say the least, to find an explanation of its apparent association with arteriosclerosis and of its concentration in the blood in relation to dietary consumption.

Page and Bernhard<sup>3</sup> found that lipemia was more marked in rabbits fed cholesterol in oil plus the di-iodide of ricinsterolic acid than in control animals. These experimental animals showed no evidence of arteriosclerosis while the controls showed the usual incidence. These observations suggested that a metabolic factor is operative in the production of arteriosclerosis regardless of the level of blood lipemia and cholesterol.

Still more recently Corwin<sup>4</sup> has reported that dogs fed a standard ration developed a more marked cholesterolemia if lecithin was included in the diet than if a high fat diet was fed. Indeed, a high fat diet alone had only an insignificant and very transient effect upon the blood cholesterol concentration. These observations are of the greater significance because hitherto it has been impossible to induce sustained hypercholesterinemia in the dog. Of even greater significance in relation to the whole question of dietary cholesterol and human arteriosclerosis is the fact that the rabbit is the only animal which shows the lesions of the disease after consumption of cholesterol in large amounts. In chickens, pigeons, goats, monkeys and other animals it has not so far been possible to produce arteriosclerosis by experimental means. The significance of Page and Bernhard's and of Corwin's re-

ports will be considerably enhanced as soon as confirmation is reported from other laboratories.

A single conclusion may be drawn from the material in this and other discussions devoted to the elucidation of the role of dietary cholesterol in the production of human arteriosclerosis. At this time there is no evidence, even suggestive, that a dietary factor is involved. Until such evidence is incontrovertibly established it appears the part of wisdom to foster wholesome dietary practices in the general population. It would be decidedly unwise to restrict the consumption of those foodstuffs which are known to promote optimal well-being. Else a new form of deficiency disease may be recognized when meat, milk, butter and other foods of high cholesterol content have been excluded from the diet of a sufficient number of persons for a sufficiently long period of time. Indeed, deprivation of the essential nutrients known to be carried by these foodstuffs may induce easily recognizable deficiency states.

#### MORAL IMBECILITY

One of our greatest social problems is moral imbecility. These persons range in age from 4 years to the end of their existence. What can be done with them? They may be imbeciles, morons or intellectuals. They are not amenable to precept, example or punishment but a definition of the characteristics of a moral imbecile and suggested means of curtailment of crime may be of some benefit.

Moral imbeciles lack morals and wisdom. The lack of morals is manifested by waywardness, intractability, intolerance of all restraint regardless of discipline, lying, stealing, torturing of dumb animals, violence and cruelty to young companions persisting despite all entreaties, extreme selfishness and unreliability. While they may not show a decided intellectual defect, they evince disregard to grasp any ideals of duty, honor, obligation or patriotism, and repeatedly commit vicious and illegal acts; there are few forms of vice and crime of which they are not capable.

The lack of wisdom is manifested by complete inability to distinguish right from wrong or to discern that the acts prove a disadvantage to them. They pay no attention to social ostracism, being expelled from school, losing situation after situation or lack of retention of jobs. Experience plays no part.

Morality is a process of the intelligence and cannot exist if the intelligence remains infantile. These persons are only intelligent enough to scheme and plan mischief but lack wisdom to realize the serious disadvantages. Their lives are marked by failure. A moral imbecile has a short circumbendibus; perhaps he has plenty of intelligence but lacks wisdom and resistance. Just as a cancer can be combated before it has become malignant so crime can be eliminated if we combat the behavior before it has

3. Page, G. L., and Bernhard, W. G.: Cholesterol Induced Atherosclerosis, *Arch. Path.*, 20:530, 1935.

4. Corwin, W. C.: Experimental Hypercholesterinemia in Dogs, *Arch. Path.*, 26:456, 1938.



become malignant. We should start correction of the child at the high chair instead of the electric chair. Children at the age of 6 or 7 are admitted to our training schools. There is an old adage, "Give me the child until 10 years of age and you can have him." School entrance age, 6 years, is late enough to combat moral imbecility. Preventive medicine is practiced today; prevention should be the aim in this. This is not a panacea for all cases but with one person of each thirty-seven a criminal, or a total of five million criminals, a certain number of successes will be of benefit.

Clarence V. Beck, Attorney General of Kansas, makes this statement: "Ninety per cent of all criminals start their careers before they are 10 years of age; age 17 leads in number of arrests for burglary; 18 years, larceny and motor car thefts; 19 years, robbery, and 22 years, murder."

If the cost of organized and individualistic crime were levied on the population of the United States as direct tax, each and every person would be required to pay \$10 per month each year. The burden probably would increase each fiscal year as it has during the present century. Fifteen billions and some odd millions of earned American dollars were converted into loot, law enforcement expense and racketeer subscriptions last year. No value is received except the protection, which protects only to the extent of holding the crime total to \$120 a year for each man, woman and child in the United States; otherwise, it would amount to \$20 per month. Much has been written, research has been extensive, great advancement made along the lines of detection, punishment given and arrests made; an effort has been made to close the door after the horse has gone. If the money and time spent on detection and conviction of criminals were directed along the channels of prevention, the crime wave would be materially reduced.

This picture depicts how we obviously should proceed. First, each child should have a mental test by the teacher or a competent psychiatrist on entering school to ascertain the I. Q. of the child. Feeble-mindedness occurs before or immediately after birth; a child never advances beyond his intelligence quotient.

Physical examinations should be made. Heredity takes its toll as does environment. Family, personal and developmental histories should be taken. The child must be considered as a whole. From this procedure one will be apprized of the "whys"; why delinquent, why incorrigible, why lack of morals and reason, why lack of resistance. With the recapitulation one is familiar with the child, his problems and disorders.

If we discover that the child is of low mentality, perhaps we should prescribe institutional care; if we find physical abnormalities, medical or surgical care; if environmental, corrected environment. Prevention should be our aim first, last and all the time.

If, at the age of 6 years, a child is beyond cor-

recting after this procedure, that child is and always will be a social charge and should be incarcerated for the rest of his existence. This problem can be handled in a profitable manner. The cost, no doubt, would be large but not comparable to billions converted into loot, law enforcement expense and racketeer subscriptions which are without value except for protection, with no consideration of the continuance of disease, poverty, misery and crime.

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## NEWS NOTES

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Dr. Damon O. Walthall, Kansas City, presented a paper at the meeting of the University of Michigan Pediatric Society in Ann Arbor on November 10 on "Postlactation Feeding."

Drs. Carl R. Ferris and C. J. Hunt, Kansas City, were guest speakers at a meeting of the Bourbon County (Kansas) Medical Society at Fort Scott, Kansas, on October 24.

Dr. E. H. Hashinger, Kansas City, was a guest of the Mitchell County (Kansas) Medical Society at Beloit, Kansas, on November 9 and spoke on "Endocrine Disturbances of the Adolescent."

Drs. Dan W. Myers and Brian Blades, St. Louis, spoke before the Trudeau Club of St. Louis on November 3 on "Occurrence of Pulmonary Abscess in the Superior Division of the Lower Lobes."

Drs. A. M. Alden, Vilray P. Blair, J. B. Costen and Roland M. Klemme, St. Louis, were guests of the American Dental Association at its meeting in St. Louis October 24 to 28 and presented addresses. Drs. August A. Werner, Louis H. Jorstad and Roland M. Klemme, St. Louis, presented scientific exhibits at the session.

The Frisco System Medical Association held its thirty-seventh annual meeting at Springfield on November 14 and 15. Missouri members appearing on the program were Drs. G. B. Lemmon, Springfield; H. R. Hildreth, J. E. Glenn and E. R. Rice, St. Louis; A. G. Eddlemon, Liberal; H. L. Mantz, Kansas City, and C. F. Briegleb, St. Clair.

The cornerstone of the Ellis Fischel State Cancer Hospital will be laid on December 9 at 1:30 p. m. The medical profession is invited by the State Cancer Commission to attend the ceremony. As the cornerstone is laid a brief ceremony will be held at the hospital site on the north side of Highway 40 in Columbia. Following this ceremony a program will be presented in the auditorium of the Hickman High School which is a quarter of a mile east on Highway 40. The principal speakers will be Honor-

able Lloyd C. Stark, Governor of Missouri, and Dr. Clarence C. Little, New York, Director of the American Society for the Control of Cancer and a member of the National Advisory Cancer Council.

Dr. Robert E. Schlueter, St. Louis, has been appointed chairman of the executive committee of the local committee on arrangements for the St. Louis Session of the American Medical Association, May 15 to 19, 1939. Dr. Alphonse McMahon is vice chairman; Dr. Percy H. Swahlen, treasurer, and Dr. James L. Mudd, Secretary. Chairmen of subcommittees are as follow: Section and section work, Dr. Llewellyn Sale; technical exhibits, Dr. E. P. Buddy; scientific exhibits, Dr. James B. Brown; registration, Dr. Henry P. Thym; entertainment, Dr. R. Emmet Kane; opening general meeting, Dr. Carl F. Vohs; President's reception and ball, Dr. Cyrus E. Burford; hotels, Dr. Neil S. Moore; women physicians, Dr. Emma Phelan; ladies, Mrs. Willard Bartlett; printing, Dr. Charles H. Eyermann; badges, Dr. F. C. E. Kuhlmann; finance, Dr. Curtis H. Lohr; transportation and taxies, Dr. Robert F. Hyland; publicity, Dr. Phelps G. Hurford; alumni and fraternity reunions, Dr. Theodore P. Brookes; clinics, Dr. Frederick A. Jostes; invited guests, Dr. Walter Baumgarten; fellowship, Dr. Lee D. Cady, and golf, Dr. Grayson Carroll.

The following members accepted invitations of Committees to deliver addresses at recent meetings of component societies:

Drs. Rex L. Diveley and Donald F. Coburn, Kansas City, were guests of the Eighth Councilor District at Joplin on October 20. Dr. Diveley spoke on "Handling of First Aid and Fractures and the Establishment of Red Cross First Aid Stations" and Dr. Coburn discussed "Head Injuries."

The St. Charles County Medical Society had Dr. Clyde P. Dyer, St. Louis, as a guest speaker at St. Charles on October 21, who discussed "The Importance of Each Physician in Conservation of Eyesight."

On October 28 Dr. Logan Clendening, Kansas City, was a guest of the Greene County Medical Society at Springfield and spoke on "Historical Hospitals."

"Fractures of the Elbow" was discussed by Dr. J. D. Horton, Springfield, who was a guest of the Laclede County Medical Society at Lebanon on November 1.

Dr. G. Wilse Robinson, Sr., Kansas City, was a guest of the Marion-Ralls County Medical Society at Hannibal on November 4 and of the Randolph-Monroe County Medical Society at Moberly on November 8. He spoke on "Mental Health" before both societies.

The Lincoln County Medical Society had as guest at Troy on November 9 Dr. August A. Werner, St. Louis.

Appearing on the program of the thirty-second annual meeting of the Southern Medical Association at Oklahoma City, Oklahoma, November 15 to 18 were the following Missouri members who presented papers: Drs. Paul F. Stookey and Louis A. Scarpellino, Frank C. Neff, G. Wilse Robinson, Jr., Ira H. Lockwood, Charles C. Dennie and Harry M. Gilkey, Thomas B. Hall, Orval R. Withers, Frank D. Dickson, Nelse F. Ockerblad and Thomas G. Orr, Kansas City; Robert Britt, Leonard T. Furlow, Wendell G. Scott and Sherwood Moore, M. F. Engman, Jr., Norman Tobias, Joseph Amozurrutia, S. J., and French K. Hansel, James Barrett Brown, Quitman U. Newell and W. C. Scrivner, Albert Kuntz, D. K. Rose and Lawrence F. Shefts, W. Kress McIntyre, Arthur W. Proetz, Lawrence T. Post, H. Rommel Hildreth, Millard F. Arbuckle and Brian B. Blades, Harvey J. Howard, Frederick V. Emmert and Borden S. Veeder, St. Louis. Taking part in discussion were Drs. Graham Asher, Russell W. Kerr, Earl C. Padgett, Frank R. Teachenor, Rex L. Diveley, J. Milton Singleton, Clinton K. Smith, Kansas City; M. Pinson Neal, Columbia; Thomas M. Paul, St. Joseph; E. C. Ernst, M. F. Arbuckle, Joseph E. Stewart, J. Archer O'Reilly, Quitman U. Newell, Ernest Sachs, Ross A. Woolsey, Arthur M. Alden, B. Y. Alvis, A. C. Stutsman and Frederick V. Emmert, St. Louis. Drs. August A. Werner and R. B. H. Gradwohl, St. Louis, and G. Wilse Robinson, Jr., Kansas City, presented scientific exhibits.

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

#### Abbott Laboratories

Capsules Digitalis Leaf, 0.1 Gm. (1½ grains)—Abbott

Abbott's Standardized Brewer's Yeast Tablets

#### Cutter Laboratory

Solution Dextrose 5% in Saftiflask Containers, 2,000 cc.

Solution Dextrose 10% in Saftiflask Containers, 2,000 cc.

Solution Dextrose 5% in Physiological Solution of Sodium Chloride in Saftiflask Containers, 2,000 cc.

Solution Dextrose 10% in Physiological Solution of Sodium Chloride in Saftiflask Containers, 2,000 cc.

#### Mead Johnson & Company

Mead's Cevitamic Acid Tablets

#### Merck & Co., Inc.

Benzocaine—Merck

Bismuth and Potassium Tartrate—Merck

Carbromal—Merck

Cinchophen—Merck

Silver Protein Strong—Merck

Sealed Tubes Cebione, 0.5 Gm.

Sealed Tubes Cebione, 1.0 Gm.



Parke, Davis & Co.

Diphtheria Toxin Diluted for Schick Test, one  
5 cc. vial package

G. D. Searle & Co.

Ampules Solution Aminophylline—Searle, 0.48  
Gm., 20 cc.

E. R. Squibb & Sons

Thiamin Chloride—Squibb

Ampule Solution Thiamin Chloride—Squibb,  
1 cc.

Tablets Thiamin Chloride—Squibb, 1 mg.

Tablets Thiamin Chloride—Squibb, 5 mg.

The Upjohn Company

Capsules Iron and Ammonium Citrates, 0.5 Gm.  
(7½ grains)

Ampoule Solution Iron and Ammonium Citrates  
Green, 0.05 Gm. (¾ grain), 1 cc.

Ampoule Solution Iron and Ammonium Citrates  
Green, 0.1 Gm. (1½ grains), 1 cc.

The following products have been accepted for  
inclusion in the List of Articles and Brands Ac-  
cepted by the Council But Not Described in N. N. R.  
(New and Nonofficial Remedies, 1938, p. 508):

Almay Pharmaceutical Corporation

Almay Mineral Oil Jelly (Unmedicated)

United States Standard Products Co.

Pollen Allergen Solutions Diagnostic

The Upjohn Company

Ampoules Solution Magnesium Sulfate 10%,  
20 cc.

## ORGANIZATION ACTIVITIES

### COMMITTEE ON MEDICAL ECONOMICS

#### Prepayment Hospital and Medical Plans

The swift, quiet growth of prepayment plans, both  
medical and hospital, presages a truly American  
type of medical practice in the United States. These  
plans must be based entirely upon community  
needs with county, state and federal funds guaran-  
teeing their success.

Plans that come under this general head can be  
divided into two main groups: (a) those based upon  
cash indemnity and (b) those based upon service.  
The first group may further be divided into two  
general groups, i. e., plans established by insurance  
carriers on a profit basis and those established by  
medical societies and communities on a nonprofit  
basis. In these the indemnity as a rule is on a cash  
basis in direct ratio to the premium paid. The types  
of contract for that reason can be as numerous as  
the ingenious insurance mind can develop. Prepay-  
ment plans on a service basis can be divided into  
those plans which have as their objective limited  
or unlimited medical, dental and hospital service  
on a fee schedule or per diem rate, or upon a unit  
of service basis.

In the next issue of THE JOURNAL the Committee on Medical  
Economics will discuss plans which have been proposed and  
are operating in other states and further proposals for this  
state.

In order to come to conclusions logically it is  
necessary to take into consideration the attitude of  
the professions, the public, the hospital administra-  
tors and the government. The attitude of the medi-  
cal profession throughout the country is definitely  
reflected in the actions taken by the House of Dele-  
gates recently on the report of the Interdepart-  
mental Committee and the conclusions of the  
National Health Conference.

The third special session of the House of Dele-  
gates of the American Medical Association in the  
history of the Association convened in Chicago,  
September 16. This session was called to consider  
the National Health Program, other matters pro-  
posed by the Board of Trustees and discussion of  
plans for the deliverance of medical, dental and  
hospital care to all the people.

Following the National Health Conference, gov-  
ernment officials indicated that the proposals made  
there would be drafted into legislation which would  
be presented to the next Congress. The purpose of  
the special session was to establish the policies of  
the Association specifically with regard to these  
proposals. Those who read the proposals realize  
that the National Health Program is truly an at-  
tempt to chart the proposed expansion of medical,  
hospital and public health activities in the United  
States during the next ten years. The House of  
Delegates considered most carefully not only the  
proposals of the National Health Program but also  
many plans and proposals from county and state  
medical societies and from various delegates.

Briefly, the House of Delegates recommended  
expansion of public health services, as related to  
the control of certain infectious diseases, maternal  
and infant welfare and similar projects, with the  
definite understanding that the need be estab-  
lished and that they be efficiently handled and eco-  
nomically controlled. The House of Delegates  
again approved the principle of hospital insurance  
with the understanding that it cover only the facili-  
ties of the hospital and that professional standards  
be maintained. It approved the principle of cash  
indemnity insurance for meeting sickness costs pro-  
vided these efforts meet the requirements of state  
laws and have the approval of the county and state  
medical societies under which they operate. The  
House of Delegates again recognized the need for  
complete medical service to the indigent, at the  
same time emphasizing the desirability of local  
control. The House recognized that the necessity  
for state aid might arise in poorer communities and  
that the federal government might need to provide  
funds when the state is unable to meet these emer-  
gencies. The needs of the medically indigent were  
considered and a definition of medical indigence  
was supplied. Here the House felt that the deter-  
mination must be made locally as to the group cov-  
ered by this term, that control of the service should  
lie with local administration and that available  
facilities should be utilized before new facilities  
were provided. Thus, the House of Delegates felt

that there was but little need for the building of new hospitals or the establishment of new diagnostic centers provided better utilization of hospitals and laboratories already functioning can be devised.

The House of Delegates restated its firm opposition to any compulsory sickness insurance plan. Finally, it approved protection against loss of income during illness.

The meeting of the House of Delegates had a most wholesome effect in allaying doubts and fears as to the position of the American Medical Association in its relationship to propaganda that has been widely circulated. The unanimity of expression and action again indicated that these representatives of 110,000 American physicians are able as a democratic body to express the wishes of the vast majority of the medical profession in this country and to speak with one voice for it.

Probably the one outstanding type of a prepayment plan receiving almost nation wide adoption is group hospitalization insurance. The most important development in this field during the last year was the adoption by the House of Delegates of the American Medical Association at San Francisco of the following amendment to Principle 4 of the ten principles adopted in 1937.

"If for any reason it is found desirable or necessary to include special medical services such as anesthesia, radiology, pathology or medical services provided by outpatient departments, these services may be included only on the condition that specified cash payments be made by the hospitalization organization directly to the subscribers for the cost of the services."

The Committee on Medical Economics of the Missouri State Medical Association has felt that it would be wiser not to include medical services of any kind in group hospitalization but, if and when a prepayment medical and dental plan is agreed upon, anesthesia, radiology and pathology should be included.

These pronouncements of the House of Delegates of the American Medical Association, designed to serve as guides for the charting of the future course of American medicine in our changing social order, are purposely broad, dealing largely with principles, basic and ethical, which, if adhered to and incorporated in any contemplated scheme of expansion, should permit the preservation of those intangible things in the delivery of medical care for which the medical profession has so long contended and which, in truth, mean far more to society than at first blush is realized.

The attitude of the public definitely has been formulated by the report of the Committee on the Cost of Medical Care, a committee appointed during former President Hoover's administration; "American Medicine" by the American Foundation; the report of the Interdepartmental and Technical Committees; the action of the attorney general against the Medical Society of the District of Columbia and the American Medical Association, and editorials

in daily newspapers and journals. Public opinion has also been developed by experience with railroad benefit associations, employees benefit associations, lodge mutual benefit associations and the workmen's compensation laws. It therefore can be said that the low income group believes prepayment medical, dental and hospital care is desirable.

The hospitals in Missouri are well satisfied with the way group hospitalization has been developed as a state wide program. There remains now only to ascertain the cost of indigent care as far as hospitals in the state are concerned and to pay them on a definite basis, a per diem rate, for the care of the indigent out of community chest funds and tax funds derived from local, county, state and federal funds. To do this it will be necessary to organize local units under a private and voluntary Health Security Administration of Missouri. Plans are now under way to develop this organization. The American Hospital Association and the Missouri Hospital Association are in full accord with this program and are giving their assistance.

Following the meeting of the special committee of the House of Delegates of the American Medical Association and the Interdepartmental Committee it may be safely said that "the role of the federal government should be principally that of giving financial and technical aid to the states in their development of plans largely of their own choice."

It is now essential that each county medical society evaluate the service it is giving the static income group. It must work out a definite program to fit into a state pattern if it wishes to participate in the benefits which will be available when states and the federal government have passed enabling acts. It is absolutely necessary for each county medical society to develop positive leadership. If each county medical society does not do this governmental agencies will later be established by law to supervise the profession in its care of the people. The Survey of the Supply and Demand of Medical Care now being conducted by the A. M. A. will materially assist in the establishment of county health programs if each county medical society cooperates in the survey. A correlation of all community programs will form the basis of the state program.

It is now opportune to emphasize certain facts and make certain specific recommendations. The established facts follow.

1. The profession maintains that all problems involving the distribution of medical care are essentially local and must be so approached.
2. Federal or state aid should be confined to financial and technical aid only in so far as local needs demand.
3. There is a growing demand for some plan of prepayment medical care insurance for low income groups.

The following suggestions are submitted:

1. All plans should be voluntary.
2. They should include all classes of wage earners of incomes below a fixed maximum determined



by local standards and limited to incomes too small to provide for medical care.

3. Absolute elimination of any profit accruing to the corporation.

4. Excessive administrative costs should be guarded against. This can be accomplished by using the personnel of Group Hospitalization as a collection agency and the Medical-Dental Service Bureau as established by the Missouri state plan as the dispensing agency.

5. Complete free choice of physician.

6. Premiums must be so adjusted that the majority of the people to be reached can participate in the prepayment plan.

7. Disbursements of funds can be on (a) case unit of service basis until sound actuarial figures are established, (b) on a definite fee schedule basis, (c) cash indemnification up to fixed amounts and not on a service basis.

8. A general state plan possibly could be subsidized by state or federal funds in the form of loans until it is self supporting.

9. The general attitude of the profession must be cooperative and not competitive.

10. The public must be educated to understand that any plans developed by the medical profession will be with the desire to furnish them the best of medical, dental and hospital care. Any abuse on the part of the public will jeopardize not only these plans but the American type of medicine which statistics have proven to be the best in the world today.

CARL F. VOHS, M.D., Chairman,  
Committee on Medical Economics.

#### POSTGRADUATE CORRELATING COMMITTEE

The Postgraduate Correlating Committee, recommended by the House of Delegates at the Jefferson City Session and organized at a meeting in St. Louis on October 13, has completed its plans and begins its program with this issue of *THE JOURNAL* in which the topic of the month, "Pneumonia," is discussed. The outline of the program as published in November is reprinted that all members may be conversant with the work. Following are the principles adopted:

1. The selection of an appropriate topic each month, either a specific disease or a health problem of paramount public importance. This topic is to be emphasized in *THE JOURNAL* by the publication of two or more original articles on the topic selected. Beginning with the December issue, the topics for the months thus far selected are:

December, "Pneumonia."

January, "Highway Accidents."

February, "Syphilis."

March, "Maternal and Infant Care."

April, "Cancer."

Each county medical society is requested to discuss the topic of "Pneumonia" at a meeting in

December and likewise the topic selected for each of the respective months following. It is suggested that the officers of each county medical society responsible for scientific presentations immediately arrange for the discussion of the monthly topic selected. Obviously speakers cannot be provided for all county medical societies monthly. In most instances members can be selected locally to discuss the topic. The articles published in *THE JOURNAL* on the respective topic for the month will be of invaluable assistance in this respect. However, during the year speakers can be supplied at intervals to well arranged county medical society meetings. In this connection, in order to assure a well attended meeting, adjoining smaller county societies could arrange to meet jointly. A meeting of the county societies in a respective councilor district is of course preferable when circumstances permit such arrangement. The topics for the remainder of 1939 will be announced in ample time for county societies to make use of them in preparing programs so that each member can prepare himself to discuss the subject.

2. Continued cooperation with the State Board of Health in presentation of scientific and preventive health programs to physicians and lay audiences. The cooperation of each county medical society in the state wide program of lectures on obstetrics and pediatrics sponsored jointly by the State Board of Health and the Association cannot be too strongly emphasized. These lectures provide a medium of giving the public the benefit of health education in maternal and infant care from a reliable source, and this is as it should be.

Syphilis is the topic for the month of February. The articles in *THE JOURNAL* will not only deal with treatment of the disease but also with the plan established by the State Board of Health for the Control of Syphilis. With a thorough understanding of the state wide plan for its control, the complete cooperation on the part of every physician will do much toward the control of syphilis in Missouri.

3. The plan will not interfere with the activity of individual committees. That it will accomplish the objective of the various committees to encourage discussion of topics in their respective fields of medicine is obvious. Request for speakers on other than the topic of the month will receive the attention of the Committee on Postgraduate Course as in the past. Headquarters office is the clearing house for all committee activity. The number of persons in attendance at all meetings, scientific or lay, is to be reported routinely by the secretary of the county medical society to the Association office.

4. A policy already established wherein a designated speaker for a scientific program will also address a lay meeting on the topic selected on request of the county medical society will be continued. Continued cooperation will be given to the Woman's Auxiliary committee on public relations.

5. Publicity and press releases on preventive

health educational activity will be under the direction of the Committees on Postgraduate Course and Publication, utilizing the facilities of the headquarters office and THE JOURNAL in cooperation with the respective committees of the Association and the county medical societies.

#### "A NEW DAY," FILM ON PNEUMONIA

Pneumonia will be the scientific theme of a film to be released to theaters throughout Missouri the latter part of December by the Metropolitan Life Insurance Company. It is designed to run as a regular feature of motion picture theater programs. Called "A New Day," the film shows the modern methods of the medical profession for combating pneumonia but also has an emotional interest making it a film of human drama as well as a scientific offering. As bookings are made in the various counties, secretaries of the societies will be notified that they may tell patients of the film, or take advantage of the showing in connection with any lay instruction on the subject of "Pneumonia" which may be planned.

The film was viewed and approved by representatives of the Missouri State Medical Association, the State Board of Health and the St. Louis Health Department. It will be shown at a meeting of the St. Louis Medical Society on December 6 in connection with a program on "Pneumonia" presented by Dr. H. I. Spector, St. Louis, Assistant Health Commissioner of St. Louis.

#### LECTURES ON PEDIATRICS AND OBSTETRICS

Lectures to the laity on pediatrics and obstetrics being given under the auspices of the State Board of Health, the Committee on Maternal Welfare of the State Association and the Extension Service of the University of Missouri College of Agriculture are scheduled as follow for December and January:

PEDIATRICS		
<i>Date</i>	<i>County</i>	<i>County Extension Agent</i>
December		
1	Howard	Dan E. Miller, Fayette
2	Medical Group	
5-6	Boone	Wendell Holman, Columbia
7-8	Callaway	Harold Slusher, Fulton
9	Medical Group	
12	Audrain	Glen Mutti, Mexico
13	Pike	S. E. Hargadine, Bowling Green
14-15	Montgomery	R. R. Vadnais, Montgomery City
16	Medical Group	
19-20	Lincoln	R. W. Bushnell, Troy

<i>Date</i>	<i>County</i>	<i>County Extension Agent</i>
21-22	St. Charles and Warren	R. A. Langenbacher St. Charles Dorris D. Brown, Warrenton
23	Medical Group	
27	St. Louis	Russell Lander, Clayton
28	Jefferson	Earl T. Steele, Hillsboro
29	Franklin	Floyd Ingersoll, Union
30	Medical Group	
January		
3	Gasconade and Maries	C. E. Klingner, Owensville Carl Durtschi, Vienna
4	Osage	Don Spalding, Linn
5	Cole	R. W. Kallenbach, Jefferson City
6	Medical Group	
9	Miller	W. D. House, Tuscumbia
10	Moniteau	Fowler Young, California
11-12	Morgan	H. G. Crawford, Versailles
13	Medical Group	
16	Benton	O. V. Singleton, Warsaw
17	Hickory	Ray S. Graham, Hermitage
18	St. Clair	Virgil Sapp, Osceola
19	Henry	Lloyd Redd, Clinton
20	Medical Group	
23-24	Bates	John Burkeholder, Butler
25-26	Vernon	L. W. Doran, Nevada
27	Medical Group	
30-31	Barton	Merle Vaughan, Lamar

OBSTETRICS		
<i>Date</i>	<i>County</i>	<i>County Extension Agent</i>
December		
1	Audrain	Glenn Mutti, Mexico
2	Medical Group	
5-6	Callaway	Harold Slusher, Fulton
7-8	Boone	Wendell Holman, Columbia
9	Medical Group	
12-13	Howard	Dan E. Miller, Fayette
14-15	Cooper	Paul N. Doll, Boonville



Date	County	County Extension Agent
16	Medical Group	
19-20	Saline	H. W. Hamilton, Marshall
21-22	Pettis	J. U. Morris, Sedalia
23	Medical Group	
27-28	Ralls	Wm. A. Rhea, Jr., New London
29	Marion	F. R. Cammack, Palmyra
30	Medical Group	
January		
3	Shelby	J. B. Carmichael, Shelbyville
4- 5	Monroe	Raymond King, Paris
6	Medical Group	
9-10	Randolph	Glenn C. Pittenger, Huntsville
11-12	Macon	Garrett M. Barnhart, Macon
13	Medical Group	
16-17	Linn	J. Robert Hall, Linneus
18-19	Chariton	John H. Rush, Keytesville
20	Medical Group	
23-24	Carroll	Albert Dyer, Carrollton
25-26	Livingston	Eugene Lee, Chillicothe
27	Medical Group	
30-31	Lafayette	Roy I. Coplen, Higginsville

Secretaries of these counties are urged to contact the Extension Agent in his county and make arrangements for these lectures.

#### NATIONAL HEALTH PROGRAM

The Committee of the House of Delegates of the American Medical Association met with the Interdepartmental Committee to Coordinate Health and Welfare Activities of the Government in Washington on October 30. No definite conclusions were reached nor specific plans made. The representatives of the American Medical Association reported the actions of the House of Delegates approving extension of public health service which deals specifically with prevention of disease and provision of hospitals and allied institutions and government assistance in care of the indigent when the need can be established. It was pointed out that in hospitalization and care of indigents the administration should be simple and placed in the hands of public officials who would cooperate with county medical societies. Opposition to compulsory sickness insurance and the fear that such a system

would be "bureaucratic, costly and political" was expressed by the representatives of the American Medical Association.

Dr. Irvin Abell, Louisville, President of the American Medical Association, is quoted in a brief report of the conference in the *Journal of the American Medical Association* of November 19 as follows:

"The reception accorded our committee was quite friendly and the discussions evinced the same spirit on both sides. They were fruitful in bringing out a better understanding of opposing points of view and in focusing attention on the discrepancies in data and statistics on which such points of view are founded. While tentative agreement in principle, not in methods of application, was reached on four of the recommendations, the conference was stymied by the question of compulsory sickness insurance. The Interdepartmental Committee is to hold conferences with representatives of other groups, notably the American Public Health Association, the American Dental Association, the American Hospital Association and the American Nursing Association. It was suggested that our committee return at a later date for further conference presumably after the above named organizations, through their representatives, have had opportunity to express their views. If this invitation is accepted an early date was suggested, as the Interdepartmental Committee will prepare its report to be submitted to the President at the opening of the Congress, when its recommendations may be embodied in proposed legislation."

#### THE STATE BOARD OF HEALTH

A few months ago the editor asked the State Health Department to contribute regularly to THE JOURNAL in order that the physicians in the state may be informed on the activities of the state department. This is the third article and a number of physicians have indicated their interest.

Inasmuch as the public health program in Missouri is dependent to a great extent upon the cooperation of the physicians, it is hoped that all readers of THE JOURNAL will read these brief monthly discussions of news and activities of the State Board of Health. Questions and comments will be appreciated.

Construction of the new state Trachoma Hospital will start on November 29. This new \$138,000 structure will occupy a three acre lot adjoining the City of Rolla. Citizens of Rolla donated the property. A federal grant of \$63,000 will supplement the \$75,000 appropriated by the State Legislature during its last session for this purpose.

The story of public health in Missouri was told to visitors from all sections of the country in the

form of an exhibit at the annual meeting of the American Public Health Association in Kansas City the last of October. The State Board of Health exhibit occupied a twenty foot booth in the Municipal Auditorium. Three electrical exhibits constructed for use in the department's statewide health education program were displayed to demonstrate what Missouri is doing to educate people in healthful living. One display was devoted to the trachoma problem in Missouri with photographs from the state trachoma hospital. Another automatic electrical exhibit stressed the need for more adequate maternal and child care. Pictorial maps and charts portrayed the expansion of the public health program in Missouri during the last eighteen months.

Because of the attention of the entire nation to Missouri's cancer program, a large colored picture of the architect's drawing of the new Ellis Fischel Cancer Hospital for Indigents was displayed. The Missouri Cancer Commission made this part of the display possible. A large picture of the State Trachoma Hospital was also included.

The department accepted an invitation to take the same exhibit to the annual meeting of the Southern Medical Association in Oklahoma City in November.

There are certain sections of the United States in which pneumonia mortality is excessively high. Missouri constitutes one of these areas. The United States Public Health Service, in cooperation with the various states, proposed to conduct five studies in these high mortality regions, these studies to include the specific types of the organism in each locality, epidemiological factors which seem to influence distribution and use of therapeutic serum. One study was assigned to Missouri and St. Louis was selected as an ideal location to make such an investigation. The St. Louis City Health Department is now actively carrying on this program in cooperation with the state and federal agencies.

Attention is called to the new ruling this school year that no Nine Point awards will be made by the State Board of Health unless evidence is presented that each child seeking an award has been examined by a physician licensed to practice medicine in Missouri. The child's birth must have been recorded and he must be immunized against smallpox and diphtheria. The wholesale distribution of Nine Point awards without adequate medical examination serves no useful purpose and leaves out of the program the local physician who must be the principal figure in this activity if it is to attain any degree of permanency. The Division of Child Hygiene sponsors this activity and is anxious to have the cooperation of physicians, not merely as a program of awards for children who have attained a minimum of physical perfection but as a plan which aims at continuous, adequate medical care of young children.

Would you believe that three clerks devote almost full time trying to interpret poor handwriting on birth and death certificates? If physicians and funeral directors would exercise more care in filling out these certificates it would bring about a noticeable saving in time and money.

Free copies of "Physicians' Pocket Reference to the International List of Causes of Death" are available to private physicians, hospital authorities and medical schools upon request. Handy pocket editions of the "Physicians' Birth Memorandum Book" are also available free on request. These birth memorandum booklets can be easily carried in a bag and are handy for making bedside notes. They are especially designed for this purpose.

Since the first of July two lecturers have been driving throughout Missouri presenting lectures to lay groups and conducting postgraduate clinical conferences for physicians. Dr. Paul F. Fletcher, obstetrician, and Dr. O. F. Bradford, pediatrician, the lecturers, are furnished by the State Board of Health.

For a year these two physicians have devoted full time to postgraduate lectures for physicians. Now, in cooperation with the Missouri State Medical Association and the Extension Bureau of the University of Missouri, their services have been made available to lay groups. The 1700 Home Makers clubs in the state seemed to furnish a good nucleus for audiences and the Extension Bureau became a sponsoring agency of this program.

With county medical societies rests the responsibility for arrangements for these meetings. In a number of counties this program has been successful because plans were made far in advance and proper publicity was given the meetings. In too many counties, it is reported, the program was unsuccessful because of unsatisfactory planning.

These lectures are significant for lay groups because expectant mothers are urged to seek medical care early in pregnancy and to place the baby under a physician's care immediately and continuously. The program employs well qualified lecturers and is too expensive to sacrifice. It is hoped that from now on all medical societies will give it full cooperation. A schedule of the lectures for December and January appears on page 499.

## OBITUARY

HOWARD O. LIENHARDT, M.D.

Dr. Howard O. Lienhardt, North Kansas City, a graduate of St. Louis University School of Medicine, 1912, died July 3, aged 46 years.

Dr. Lienhardt was born in Allsport, Pennsylvania, and completed his preliminary education in that state. After receiving his medical degree he interned in Research Hospital, Kansas City, and then began practice



in North Kansas City where he remained in active practice until a few weeks before his death.

Dr. Lienhardt was active in civic affairs in North Kansas City and during his twenty-five years of practice there had gained the esteem of the community. He was a member of A. F. & A. M., the American Legion, I. O. O. F., Wood Hills Golf Club and was a former member of the school board.

He is survived by his widow, Mrs. Helene Walker Lienhardt, a brother, two sisters and two nephews.

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#### WILLIAM JACOB RABENAU, M.D.

Dr. William J. Rabenau, Springfield, a graduate of the Missouri Medical College, 1885, died of Bright's disease at his home August 26, aged 81 years.

Dr. Rabenau was born in Allegheny City, Pennsylvania. He moved to Missouri in 1895 locating at Everton where he remained until 1923 when he went to Springfield and remained in general practice there until a year ago when he retired because of ill health.

He had served the Greene County Medical Society as alternate delegate, delegate and president. He was elected an honor member of the Greene County Medical Society on April 22, 1938. He had served as president of the Southwest Missouri Medical Association.

He is survived by his widow, Mrs. Grace Rabenau, two sisters and three brothers.

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#### SILAS M. SANFORD, M.D.

Dr. S. M. Sanford, Palmyra, a graduate of Bellevue Hospital Medical College, New York, 1886, died of a heart attack at the Mayo Clinic, Rochester, September 10, aged 78 years.

Dr. Sanford was born in Marion County and attended school there. He attended high school in Kirksville. After completing his medical studies he began practice at Mt. Zion but after a few months he moved to Palmyra. He remained in practice there until two years before his death when he began to retire from active practice but continued to go to his office each day.

He was active in civic affairs serving for many years on the school board and taking a prominent part in church and community affairs.

Surviving are his widow, Mrs. Mary Dudley Sanford, a daughter, a son and a brother.

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## BOOKS FOR LEISURE MOMENTS

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### INSTRUCTION ON LIVING

Despite living at the pace that kills, Americans today are existing longer than at any previous time. Despite the tension of American business those who tend this business live longer than their predecessors who hewed virgin forests. Despite a declining birth rate and the motor car there are actually more people now living than at any other period in the history of the United States. There have been any number of authors who want these persons to live better than they have ever lived. Some of them advise on methods of having more friends, some on methods of alienating friends, some on methods of avoiding the lures of quacks, some on the methods of keeping out of the clutches of fraudulent advertisers. All have one attribute in common: a method.

Now comes Dr. Edmund Jacobson with a method of going to sleep. Instead of awaking from a doze to write down the magic formula of scientific or business success, the aspiring youngster grasping for success is told

that if he relaxes he may prosper for his work will be more effective. Worry, we are asked to believe, will do worse than add grey hairs to the head.

Whether or not longevity and health may be enhanced by freedom from the tension inherent to modern living, there can be no question that it multiplies the difficulties of existence. Hence any proposal which gives reasonable promise of making life easier and pleasanter for the average citizen is worthy of the attention of the medical profession. Whether one can agree (and I cannot) with the explanation offered by Dr. Jacobson one is sure to find much valuable information in "You Can Sleep Well" (Whittlesey House, New York).

Undoubtedly the physical and mental gymnastics suggested by the author will lull any one to sleep. There can be no harm from their use and they are of some potential value insofar as they restore a measure of sanity to the rushing populace. B. Y. G.

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### HUMAN BABIES

Dr. C. Anderson Aldrich and his wife have been impressed with the report of an anthropologist that the elder statesmen of many savage tribes complain bitterly that the younger generation of their people is rapidly going to the dogs. In "Babies Are Human Beings" (The Macmillan Company, New York) they present a physiological and psychological interpretation of the baby's growth. The plaint of modern children may be summed up in the statement that nature refuses to be imposed upon by nurture and that, conversely, nurture refuses to abide by the demands of nature.

The baby is not static. His is a rapidly expanding mechanism, seeking to adjust itself to the complexities of existence. Parents, relatives and friends conspire to thwart his normal expression because they fail to recognize that nature endowed him with the ability to fit into life—if he were not coddled and pampered to excess. These self-appointed omniscient guides depend too much upon the fanciful folklore of childhood, too little upon ordinary common sense.

"Babies Are Human Beings" should be a prerequisite to parenthood. Physicians may find within its pages no end of rational, even though scientific, advice. B. Y. G.

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### THE PATIENT SOLVES HIS PROBLEM

Alexandra Adler, the daughter of Professor Felix Adler, presents a small volume under the title, "Guiding Human Misfits" (The Macmillan Company, New York). A psychologist, she presents a series of case reports with illustrative comment to elucidate the benefits of individual psychology as it aids the individual to resolve his conflict with society, to choose a profession and to make an acceptable adjustment to the complex described under the term, "love." The book may have some value for those who seek an understanding of the method espoused by the author. More likely it will prove too technical for the layman, too simplified for the physician. B. Y. G.

"Twenty-Eight Years of Sterilization in California" is a fifty page pamphlet published by the Human Betterment Foundation. It describes the social and economic rehabilitation of that group of persons submitted to sterilization because of feeble-mindedness. Of persons admitted to California institutions for the mentally diseased, about one fourth of those eventually released are sterilized, either by tubal section or by vasectomy. The authors believe the method has produced gratifying results. They find it has ameliorated sex delinquencies in the treated group. B. Y. G.

## COUNCILOR DISTRICT AND SOCIETY PROCEEDINGS

### COUNTY SOCIETY HONOR ROLL FOR 1938

(UNDER THIS HEAD WE LIST SOCIETIES WHICH HAVE  
PAID DUES FOR ALL THEIR MEMBERS)

#### HONOR ROLL

Chariton County Medical Society, November 23, 1937.  
Perry County Medical Society, December 4, 1937.  
Ste. Genevieve County Medical Society, December 14, 1937.  
Camden County Medical Society, January 7, 1938.  
Webster County Medical Society, January 7, 1938.  
Montgomery County Medical Society, January 14, 1938.  
Dent County Medical Society, January 21, 1938.  
Miller County Medical Society, February 8, 1938.  
Moniteau County Medical Society, March 11, 1938.  
Morgan County Medical Society, May 7, 1938.  
Macon County Medical Society, July 30, 1938.  
Pulaski County Medical Society, August 3, 1938.  
Howard County Medical Society, August 5, 1938.

ASSOCIATE EDITORS: COUNCILORS OF THE  
TEN COUNCILOR DISTRICTS

#### SIXTH COUNCILOR DISTRICT

A. J. CAMPBELL, SEDALIA, COUNCILOR

##### Lafayette County Medical Society

The Lafayette County Medical Society met in Odessa on October 25.

Dr. and Mrs. Herbert L. Mantz, Kansas City, were the guests and speakers of the Society and the Auxiliary.

Dr. Mantz spoke on "The Tuberculin Test, Its Application and Interpretation." He illustrated his talk with numerous case histories and roentgen ray plates.

The Auxiliary met at the home of Dr. and Mrs. W. E. Martin. Mrs. Mantz spoke on "The Plans and Purposes of the State Auxiliary."

The Auxiliary and the Society were guests of Dr. and Mrs. W. E. Martin at a delightful social hour after the adjournments of their business sessions.

Dr. E. L. Johnston, Concordia, was presented a birthday cake with three candles, the candles representing the Past, Present and Future. It was significant to his friends that when he attempted to extinguish the lighted

candles, the candle of the Past was not easily put out and necessitated a small amount of manipulation on the part of Dr. Johnston in order to darken it.

E. S. WALLACE, M.D., Reporter.

#### SEVENTH COUNCILOR DISTRICT

E. P. HELLER, KANSAS CITY, COUNCILOR

Following a successful fall conference conducted by the Kansas City Southwest Clinical Society and the sixty-seventh annual meeting of the American Public Health Association, the 1938-1939 activities of the Jackson County Medical Society got off to a flying start on November 22 with the regular meeting of the Society given over to a pneumonia clinic which was well attended.

Following the schedule of the 1937-1938 season of establishing Tuesday as medical day in Kansas City, the following outline is in effect for the 1938-1939 season: Surgical and Medical Clinic, 9:00 to 10:30 a. m.; Clinical Pathological Conference, 10:30 to 11:30 a. m.; Tumor Clinic, 11:30 a. m. to 12:30 p. m. The afternoons, from 2:00 to 5:00 p. m., will be given over to postgraduate courses varied throughout the season.

The Group Hospital Service plan inaugurated in the late summer is now four months old. The interest evidenced by the community in this plan has exceeded all expectations, with approximately 14,000 people being covered by the plan at this time. The participating hospitals and the physicians who have cared for patients under the plan are well pleased with its operation.

The Medical Business Bureau, now in its second year of operation, is on a sound financial basis proving that such services under professional supervision can be operated successfully without being a financial burden to the membership. Many new services and functions have been offered in the last few months in addition to the collecting and credit information service. The new auditing and accounting service of the Bureau is receiving favorable comment from the membership, and where the service is being utilized it is proving its value daily.

#### NINTH COUNCILOR DISTRICT

ELDON C. BOHRER, WEST PLAINS, COUNCILOR

##### Dent County Medical Society

The Dent County Medical Society met October 28 at Salem with the secretary, Dr. F. E. Butler, Salem, presiding.

Drs. Marvin Grossman and C. H. Diehl were unanimously elected to membership and the transfer of Dr. E. C. Cline from the Boone County Medical Society was unanimously accepted.

The immunization program for public schools of the county was discussed and approved as proposed by the State Board of Health.

Mr. E. H. Bartelsmeyer, St. Louis, discussed the proposed county survey and was aided in the discussion by Dr. E. C. Bohrer, West Plains, Councilor.

The special session of the House of Delegates of the American Medical Association was discussed

The resettlement program was discussed and the matter will be discussed further at a later meeting.

The following guests and members were present: Dr. E. C. Bohrer, West Plains; Mr. E. H. Bartelsmeyer, St. Louis; Drs. L. H. Hunt, G. E. Joseph, Marvin Grossman, Edward C. Cline, C. H. Diehl and F. E. Butler, Salem.

F. E. BUTLER, M.D., Secretary.



**TENTH COUNCILOR DISTRICT****E. J. NIENSTEDT, SIKESTON, COUNCILOR****Cape Girardeau County Medical Society**

The Cape Girardeau County Medical Society met at the Colonial Tavern November 15 at 8 p. m. Dr. D. H. Hope, Cape Girardeau, called the meeting to order.

Members present were Drs. J. H. Cochran, D. B. Elrod, F. W. Hall, D. H. Hope, Paul Nussbaum, W. F. Oehler, O. L. Seabaugh and C. A. W. Zimmermann, Cape Girardeau; Edward Crites, Sedgwickville, and W. W. Ford, Gordonville. Dr. E. J. Nienstedt, Sikeston, Councilor, was present and many guests from Southern Illinois.

Dr. Hope appointed Dr. J. H. Cochran a member of the legislative committee.

The secretary announced that dues were past due.

The secretary requested members to send in the completed questionnaires.

A film on "Pneumonia" exhibited by the Lederle Laboratories was presented. Dr. F. E. Schmidt of that company gave the lecture and answered questions following the film.

The program committee extended the thanks of the Society for the entertaining program.

There being no further business the Society adjourned progressively to lunch tables, card tables and to bed.

C. A. W. ZIMMERMANN, M.D., Secretary.

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**WOMAN'S AUXILIARY**

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**WOMAN'S AUXILIARY TO THE AMERICAN MEDICAL ASSOCIATION****17th Annual Meeting, St. Louis**

President, Mrs. C. C. Tomlinson, Omaha, Nebraska.

President-Elect, Mrs. Rolla K. Packard, Chicago.

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**WOMAN'S AUXILIARY TO THE MISSOURI STATE MEDICAL ASSOCIATION****15th Annual Meeting, Excelsior Springs**

President, Mrs. Herbert L. Mantz, Kansas City.

President-Elect, Mrs. Paul F. Cole, Springfield.

At 10 a. m. on November 11, forty members of the Board of Directors of the Woman's Auxiliary to the American Medical Association were called to order by the president, Mrs. C. C. Tomlinson, in one of the private dining rooms of the Palmer House, Chicago. Old friends and acquaintances of past board and convention sessions had exchanged greetings so the business was soon underway. Your president was happy to be joined by Mrs. Paul Cole, president-elect, whom she had invited to attend as a listener.

Mrs. Tomlinson emphasized in her report that the force of the auxiliary (better than 20,000 members) has not yet been fully appreciated, that its strength is proportionate to the number of county units and that the progress will be in proportion to the way the counties function. Mrs. Frank Haggard, Texas, first vice-president, in presenting the report of the Committee on Organization urged dissemination of aims and purposes of the national auxiliary because "women will not remain in a group they do not understand, nor will our men approve new groups without work for them to do."

The treasurer, Mrs. E. E. Fisher, Oregon, reported \$1000 in the savings account and a balance of \$4227.52 in the checking account, allowing for receipts and disbursements since July 1, 1938. Mrs. James Lester, reporting for *Hygeia*, stated that each year the total subscriptions had increased, likewise the goal. In 1937-1938, subscriptions totalled 7531. This year the goal is 15,000 inasmuch as 6182 eight months subscriptions have been secured from the legislature of Tennessee to be placed in every elementary school, both black and white, all colored high schools and a few white high schools where *Hygeia* is not already provided. Mrs. Rogers Herbert, Tennessee, former president, was called to the floor to relate her procedure in securing this appropriation. Adjournment for luncheon followed the report of Mrs. E. A. Barnes, Kentucky, as historian, who called herself a \$10 a year lady (budget allowance) with a \$500 job.

Dr. W. W. Bauer, Chicago, addressed the members following luncheon, urging upon us the appreciation and use of the radio for its educational programs and as a mouthpiece for our organization. He announced that reprints of the special session of the American Medical Association of September 16 were obtainable from his office up to amounts of one hundred for one auxiliary. In conclusion he outlined the position of the American Medical Association on the five points of the National Health Program.

The afternoon session reopened the business at 2:30. Mrs. Henry Raile, Utah, as Chairman of Public Relations, gave us food for thought in the question "What of the mote within thine own eye?" We were advised to promote good will within before attempting to widen our relations. The words of Dr. Irvin Abell were quoted "The Auxiliary is the logical public relations committee of the American Medical Association." The day brought rather keen discussion as to the benefit of prizes. Late in the day action was taken to discourage the use of national prizes and awards except in the instance of *Hygeia* projects.

To a state president there is much interest in comparing the projects, membership, budgets and accomplishments of the various states. Pennsylvania with the largest membership of 2610 gives the most startling report of \$30,623 put into the Medical Benevolence Fund in eleven years. (Several other states also reported benevolence funds for their aged physicians.) This group is most active in the assistance given the Pennsylvania State Medical Association in preventing inimical legislation. Many states have instituted state clipping bureaus, each county having a chairman who secures two copies locally of each editorial or news item that bears on the medical profession, one going to the chairman of the state clipping bureau who clears those of value and sends to the Public Relation Chairman to be filed for reference and use of the medical association if desired.

Tennessee is sponsoring a movement to require domestic servants to keep health certificates up to date. The president of Texas reported a budget of \$400 for her office, bigger by far than most of the state budgets, that of Missouri for instance.

Dr. Charles B. Wright, Minneapolis, of the Advisory Council, at the conclusion of his own busy day with the trustees, brought greetings and instructions to the women to "carry on" in their avenues of usefulness.

After announcements of the St. Louis convention for May 15 to 19, 1939, with headquarters at the Chase Hotel, the meeting was declared adjourned at 6 p. m. after a long and helpful session for the forty members who had traveled thousands of miles to renew their enthusiasm and secure counsel for their tasks.

MRS. HERBERT L. MANTZ, President,  
Woman's Auxiliary to the Missouri  
State Medical Association.

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## THE PHYSIOLOGY OF VITAMIN C

C. G. King, Pittsburgh (Journal A. M. A., Sept. 17, 1938), states that dry seeds contain practically no ascorbic or dehydroascorbic acid but, when they are moistened and warmed, ascorbic acid appears within a few hours in the areas where the sprouting processes are apparently initiated. Unripe, rapidly growing seeds, such as green peas, are relatively rich sources of the vitamin, but as ripening advances the concentration approaches zero. All actively growing parts of the higher plants (roots, stems, buds and pods), all fresh green leaves, many of the algae and perhaps even bacteria contain significant quantities of the vitamin. The carotenoid pigments are frequently accompanied by high concentrations of ascorbic acid in both plant and animal tissues, as in rose hips, paprikas and corpora lutea, but there are many exceptions to such a relationship, as in vitamin rich, nonpigmented sprouts. Of the extensive number of animals studied, only man, the other primates and guinea pigs do not have a capacity to synthesize ascorbic acid. In relation to infant nutrition and from the point of view of comparative physiology, human milk normally contains from four to five times more vitamin C than cow's milk. The human infant has a high dietary requirement to meet the need for rapid growth and general metabolism, but the calf is not dependent on a dietary supply, its current requirement being met by tissue synthesis, as in the rat and the chick. When the human mother's diet is seriously deficient in antiscorbutic foods, however, the concentration in the milk gradually falls to approximately that of cow's milk, and when, the vitamin C intake is increased, the antiscorbutic value of the milk returns to normal. The most clearly established functional role of vitamin C in animal tissues is in relationship to the physical state of the "intercellular material," as described by Wolbach and his associates. The relationship of vitamin C to calcium metabolism is intimately associated with this phenomenon. Both roles are clearly of major importance in relation to growth and repair of bones and teeth, and it is evident that other tissues, such as cartilage and white fibrous tissue, are markedly affected in a similar manner. The chemical mechanism through which the vitamin brings about this control of metabolism is still unknown. From the close relationship between growth and vitamin C content it is reasonable to conclude that the vitamin has an essential role in the over-all growth processes of animals and plants. At the present time it is impossible to indicate with certainty any specific relationships between vitamin C and the enzymes in animal tissues so far as normal physiologic processes are concerned; but many papers record activating and inhibiting effects on enzymes in vitro and it is not unlikely that some of the observed effects will prove to be physiologically significant.













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